THE LIVED EXPERIENCES OF BLACK, MALE YOUTH APPRENTICES IN CAREER AND TECHNICAL EDUCATION APPRENTICESHIP PROGRAMS

A Dissertation
By
ELIZABETH K. ANDREWS-STANDAFER

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Abstract

THE LIVED EXPERIENCES OF BLACK, MALE YOUTH APPRENTICES IN CAREER AND TECHNICAL EDUCATION APPRENTICESHIP PROGRAMS

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The lived experiences of three Black, male youth apprentices in North Carolina were told through a qualitative multi-case study. The participants in each case began recruitment for apprenticeship as a high school student though a pre-apprenticeship experience and were hired as full-time apprentices upon completing their program. All of the apprentices were exposed to career awareness activities that connected them to real-world experiences and career pathways before, during and after their recruitment. They also experienced economic mobility by choosing an apprenticeship pathway. Wrap-around services that included support from parents, school, work, other apprentices and the apprentices themselves sustained the apprentices and led to their persistence. Three themes emerged in the findings that support the recruitment and retention of Black, male youth apprentices: exposure to career awareness experiences that link students' abilities and interests to viable career opportunities, the benefits of economic mobility and wrap-around supportive services that involve multiple stakeholders.

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Dedication

In memory of Dr. Edwin L. Stockton, Sr.
You always made me feel smart.

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Chapter I: Introduction

Chapter One addresses the historical and current reality of work-based learning access and completion for marginalized students in Career and Technical Education (CTE) programs. Black, male students, the focus of this study, fall behind their peers in participating in work-based learning programs like apprenticeships. As a result, they experience significant inequalities in economic mobility compared to students in other demographic groups who profit from a free education and a salary with benefits including health insurance and a 401K. In this chapter, the statement of the problem, the research questions, an overview of the methodology and the significance of the study are introduced. This section concludes with the definitions of the research terms and an explanation of the organization of the chapters to follow.

Despite the dwindling numbers in the current workforce, there is a long history of Black participation in CTE training programs, particularly in apprenticeship. From 1619-1846 there were many apprenticeship and manual labor programs available to slaves along with opportunities in private industrial institutions like Tuskegee and Hampton (Gordon, 2014). After the Civil War period, Booker T. Washington and Frederick Douglass spoke strongly about expanding vocational training for African Americans and from 1910-1930 public secondary programs began offering manual training for Black students (Gordon, 2014). The manual training movement offered an educational response to the massive influx of rural, poor and uneducated African Americans in the South and the high attrition rate in high school that left them uneducated. But in the 1930's, industrial advancements demanded more skilled workers and White schools began emphasizing industrial training to claim access to higher paying jobs. Black students were offered more academic education and less

vocational training during the recession leaving Black schools underfunded with low skill, low wage programs. The underrepresentation of Blacks in skilled industrial and business programs likely led to lower participation in these careers and greater economic disparity (Gordon, 2014). Today, however, Black students across the nation have high enrollment in vocational coursework resulting in new questions about their overrepresentation along with an attached stigma of CTE as a program for low achievers (Gordon, 2014). Many Black youth tend to view vocational education as inferior to academic education resulting from past issues of access to training meant for lower-paying jobs (Nall, 1997). In accordance with Nall (1997), this view is likely to persist until Black students are prepared for and gain access to high-quality training that provides the skills for successful entry into the 21st Century workforce.

Marginalized groups commonly experience problems effectively accessing and completing work-based learning opportunities (Bennett, 2007). Whether in a rural or urban setting, the body of Work-Based Learning (WBL) research indicates their experiences have been plagued with issues of disconnectedness to related coursework, lack of support, inappropriate modification for their unique circumstances, and feelings of isolation from peers and family. Re-emerging CTE programs, like apprenticeship, require the active involvement of industry partners, Local Education Agencies (LEA), community college programs and community resources to mitigate these issues and provide WBL opportunities that afford all students the work experience and preparation they need to assume the jobs of the future (Symonds, Schwartz, & Ferguson, 2011).

United States Department of Labor (USDOL) statistics indicate that the group most likely impacted by access and issues of completion of a CTE apprenticeship are Black males,

who are enrolled in apprenticeship at lower rates than Hispanic males and both Hispanic and Black females (Reed et al., 2012). Gordon (2014) cited Oakes (1990) who found Black students from low-income, inner-city backgrounds, or who are enrolled in low-ability classes, have historically had fewer opportunities than traditional students to participate in demanding academic programs. Since the 1960's and 70's, legislation has been aimed at improving access into high-quality CTE programs for marginalized groups. The Vocational Education Act of 1963 expanded federal funding to include work-study programs and the nation began to take seriously the disenfranchisement of students due to economics, race, and disability through the authorization of the Elementary and Secondary Education Act (ESEA) (Richard, Clark, & Welch, 2011). Near the end of the 20th Century, the term "global competition" began to appear in reports like *A Nation at Risk* which highlighted the plight of disenfranchised youth. With the Carl D. Perkins Vocational Act of 1984 to soon follow, federal funding under Perkins authorized $125 million to states for work-based learning programs through cooperative education (Richard, Clark, & Welch, 2011). The Secretary's Commission on Attaining Necessary Skills (SCANS) report in 1991 further connected schools and industry as the skills and competencies needed for successful employment were defined, leading to the National Skills Standards Act of 1994. This act identified the 16 nationally recognized career clusters that have become integral in current work-based learning sector strategies and career pathways. Also in that year, the School-to-Work Opportunities Act allowed the use of federal funds for a school-to-work transition system in which all students were to be provided the opportunity to participate in work-based learning (Richard, Clark, & Welch, 2011).

As the 21st Century approached, The Workforce Investment Act of 1998 spawned a new age in job-training. The law required national job training frameworks, "one-stop" training centers, and state and local workforce boards comprised of both industry and education partners. Perkins legislation was reauthorized twice after its initial implementation, deepening the reach of the Federal Government in monitoring the states' ability to prepare students and adult job seekers for careers in the 21st Century (Richard, Clark, & Welch, 2011).

Even with decades of top-level reporting that led to federal legislation, the success of states to prepare students to graduate work-ready has remained unchanged since the1960's, and the skills gap has continued to widen, leaving marginalized students with missed opportunities, fewer options, and lower wages (Symonds, 2012). Higher than average participation rates in CTE programs among Black students compared to other demographic groups has remained unchanged since the end of the 20th Century, yet Black students, in particular males, continue to be the least represented demographic in CTE apprenticeship programs in the United States (Reed et al., 2012). This disparity creates the likelihood that those who could benefit the most economically by participating in and completing a work-based learning program, may not be positioned to do so.

In accordance with the 2011 *Pathways to Prosperity* report published by the Harvard Graduate School of Education, difficulties related to entry and access into the labor market will continue to rise as the population of youth ages 16-24 years continues to increase. This age is critical for the development of career skills and competencies, yet people in this age group are not able to get the experiences they will need to be successful in the work environment (Symonds, 2012). Additionally, two-thirds of people entering the workforce in

the 16-24 age bracket will be non-Whites with lower formal educational levels making successful career exposure through WBL programs even more critical for these participants (Bennett, 2007).

Statement of the Problem

Symonds (2012) states that there is overwhelming evidence American students are insufficiently prepared for both college and work upon graduation, which contributes to both the skills gap and issues of economic mobility for today's youth. Current challenges for marginalized groups in the economy and labor market result from the erosion of community ties, limited social resources, and increased occupational disengagement (Bennett, 2007). These trends present both an opportunity and responsibility to prepare all students for engagement and participation in the global economy. Although there is an acknowledgment of the barriers and limitations of effective work-based learning programs in the research, leaders have failed to formally address and systematically solve the problems that cause marginalized students to either not attempt or fail to complete the experience, ultimately widening the margins. Even when specific barriers for marginalized students are known to WBL supervisors, Daviso and Textor (2013) posit that a lack of training on the part of instructors to modify the delivery of work-based learning instruction reduces the effectiveness of the experience. Additionally, many traditional CTE programs have long been plagued by low academic standards and poor instruction (Symonds, Schwartz, & Ferguson, 2011). The key to success of any program working with marginalized populations is identifying the right people to work with these students. In accordance with Foran (2015), people who are committed to the mission (access and equity for marginalized students) are of greater importance than even the development of the program itself. An understanding

among stakeholders of how to implement and modify programs to fit the needs of special populations has important implications for student achievement and success for future employment (Clark, 2015). This is echoed by Bennett (2007) who found that greater understanding is needed among policymakers, community members, educational leaders, and researchers about the role of social support for marginalized students in future occupational engagement to reduce their risk of disengagement as an adult. The purpose of this research is to understand the experiences of Black, male youth apprentices and the conditions that helped them to overcome the barriers they faced gaining access to and completing an apprenticeship program. Learning from these successful apprentices will inform educators, industry sponsors, and government leaders about how to create apprenticeship programs that encourage, support and increase Black, male participation in high-skill, high-wage careers.

Methodology and Research Questions

The purpose of this research is to study the lived experiences of Black, male youth who successfully completed CTE apprenticeship programs beginning in high school with a pre-apprenticeship leading to high skill, high wage employment after completion. A descriptive qualitative study of the program components and conditions that supported the persistence of Black, male students in Career and Technical Education apprenticeship programs will inform equitable practices that lead to economic mobility for the participant, return on investment for the company, and an economic pipeline in the community. This research will position leaders to improve issues of access and retention facing Black, male apprentices to ensure that future participants are positioned to participate and complete.

The research methodology is a multi-case study of three registered apprentices who participated in programs in North Carolina and whose apprenticeships yielded jobs in high-

demand, high wage career fields. The inquiry will begin with an in-depth review of the recruitment procedures followed by the participants. They, along with the support personnel who interacted with them, will participate in semi-structured interviews regarding the apprenticeship experience. The primary research question to be addressed in the research is the following: 1) "What are the lived experiences of Black males who were successful in completing a registered apprenticeship program? The research will be used to obtain specific detail from Black, male students and related support personnel about circumstances that supported persistence in the WBL program to answer the following subsequent research questions: 2) What are the structures and characteristics of the program in which the Black, male student participated? 3) What roles did adults play (i.e.: career development coordinators, school counselors, instructors, school leaders, community mentors, industry mentors, parents/guardians) in the process? 4) What did the Black, male students who completed an apprenticeship attribute to their success/ability to complete? 5) What barriers, if any, did the Black, male students face and how were they overcome?

Significance of the Issue

Research by Shumer and Digby (2013) and Anderson (2015) suggests that work-based learning initiatives have been in a refining process over the past decade. Ideas for how to implement work-based learning have traveled from state to state, each one improving on the latter. Research on how these models have addressed Black, male participation and resulting best practices for access and retention are not evident in the literature. The strongest, most relevant research is the *Pathways to Prosperity* framework that has become North Carolina's blueprint for work-based learning programs. The Pathways framework was formally introduced in a 2011 Harvard report from the Pathways to Prosperity research

project of 2008 (Symonds, 2012). It was an indictment of the American education system for failing to address the decline of a skills-based curriculum mandatory to prepare students for 21st-century jobs (Symonds, 2012).

A vital component of the Harvard model is the strategic placement and requirement of work-based learning opportunities within a course sequence. To ensure the collaboration of education entities with industry, the pathways development framework was signed into law in 2013 by Governor Pat McCrory as his first official act as governor ("SL 2013-1," n.d., Session laws section). The legislation made it mandatory that community colleges and K-12 systems partner with industry to create pathways through sector partnerships that include access to WBL programs. With the emergence of a pathway system and 2015 mandates through federal legislation via the Workforce Innovation and Opportunity Act (WIOA), requiring states to fund work-based learning opportunities for underserved youth, the issues of equity and access are paramount to success for all students. No post-legislation research on North Carolina's implementation of WBL programs related to race equality or its economic impact on marginalized students, in particular Black males, is found in the literature.

A logical way to determine successful WBL practices that have supported persistence of Black, male participants is to explore the topic with students who were selected from pre-apprenticeship programs in high school to become registered apprentices. Bennett (2007) studied the required district-wide WBL placements of marginalized seniors from 17 high schools in a mid-west school district but found the impact on the students in his quantitative study to be mixed. The methods in his research utilized surveys and demographic data to obtain information from and about the students in the program. The results yielded limited

information about the true engagement of the participants. Non-specific indicators like "perhaps" and "may have" were used to explain the results in his study and provide a clear indication that a qualitative approach to inquiry would be beneficial in determining why students who persist are able to do so. In fact, the generalizability of the results of the study was found to be a limitation by Bennett (2007). A qualitative research study of the lived experiences of participants in Career and Technical Education apprenticeship programs will help to close the access and equity, support WIOA policy (Hoffman & Schwartz, 2015), and strengthen career pathway models in the State.

Access and equity are important to ensure that persistence leads to economic mobility for marginalized student populations like Black males in apprenticeship programs. This study is designed to bridge the gap between commonly recognized barriers to WBL and the practices uncovered by the research that contributed to the persistence of the participants. It addresses generalizations and questions left by the research of Bennett (2007) regarding marginalized students and their experiences in a WBL program and examines the influence of the *Pathways to Prosperity* framework on North Carolina's Career and Technical Education apprenticeship programs. Based on the fact that WBL has a positive impact on post-secondary placement for both the marginalized student and the economy (Symonds, 2012), further research into the supports that improve outcomes for Black, male students is critically important. WBL without meaningful social supports in place is not beneficial (Bennett, 2007). Likewise, understanding barriers without determining ways to overcome them also lacks benefit for all stakeholders. This work is necessary to ensure that all students benefit from apprenticeship experiences, particularly those marginalized by a system of the "haves" and the "have-nots." If only certain demographics of students benefit from WBL, the

disenfranchised will continue to be caught in a cycle of underemployment and unemployment that has contributed to economic and labor market issues in the State. This research is a counter-narrative that highlights the success of Black, male youth apprentices and identifies practices that supported their completion. The study will assist stakeholders in developing new solutions for existing barriers that limit access and lower completion rates in their WBL programs**.**

Definition of Terms

Apprentice: the expert shows the apprentice how to do a task, watches as the apprentice practices portions of the task, and then turns over more responsibility to the apprentice until the apprentice is proficient enough to accomplish the task independently.

Apprenticeship: programs registered with the U.S. Department of Labor or a state apprenticeship agency in accordance with the act of August 16, 1937 (the National Apprenticeship Act) that are conducted or sponsored by an employer, a group of employers, or a joint apprenticeship committee representing employers and a union. The program contains all of the terms and conditions for qualification, recruitment, selection, employment and training of apprentices. Current programs typically combine on-the-job learning with supplemental coursework (Gordon, 2014).

Career and Technical Education (CTE): the preferred usage of the term, vocational education, which is still selectively used to accurately describe CTE in a historical context. It is an organized educational program offering with a sequence of courses related to the preparation of individuals in paid or unpaid employment and emerging occupations requiring other than a baccalaureate or advanced degree. Programs include competency-based applied learning that contributes to students' academic knowledge, higher order reasoning, problem-

solving skills, work attitudes, general employability skills and occupation-specific skills necessary for economic independence (Gordon, 2014).

Consortium: an association of two or more companies with the objective of participating in a common activity or pooling their resources for achieving a common goal related to apprenticeship recruitment or related education in a local area.

Cohort: a group of students chosen within a recruitment cycle to become apprentices and participate together in their related education and on-the-job learning activities.

High Demand: an occupation with a projected growth rate above the percent average employment growth rate for all occupations. High demand occupations are defined by the Federal government and have more than the average number of new openings.

High Skill Occupation: an occupational field that leads to a certificate of completion, associate degree, license, certification or apprenticeship (Gordon, 2014).

Pre-apprenticeship: a paid or unpaid work experience used for recruiting apprentices that includes either on-the-job learning, related education, or a combination of both.

Work-based Learning (WBL) program: includes internships, mentoring, and apprenticeship and is a way to discover things that cannot be learned in a classroom such as inside information about the career. In this research study, work-based learning focuses on apprenticeship which is a combination of on-the-job training (OJT) and related classroom instruction under the supervision of a journey-level craft person or trade professional in which workers learn the practical and theoretical aspects of a highly skilled occupation. The experience is paid and has a sliding wage scale that increases as the apprentice accomplishes pre-determined skills and educational requirements (Gordon, 2014).

Marginalized: treated as insignificant or peripheral. In this research study, marginalized refers to Black male participants living in poverty.

Black Male Apprentice: the subjects, in this case, are operating on a socially based system of American racial classification ethnicity and are perceived to be dark-skinned compared to other given populations. The Black males referred to in this study will also be identified as having socioeconomic barriers in addition to being Black and male.

Organization of the Study

As a former Career and Technical Education director and current youth apprenticeship coordinator for the State, I have witnessed the exclusion of marginalized populations in work-based learning programs. I have also grappled with the fact that there are many barriers to completion. Black males rarely participate in and complete apprenticeship programs. I have frequently observed work-based learning structures with attributes that are not conducive to their success. Many stakeholders express a desire to provide more equitable services but are unsure how to better serve marginalized populations, while others are unaware of the benefits of supporting underserved populations. In my work, I have discovered a small number of apprenticeship programs with an above average number of Black, male participants who completed their programs. The companies who sponsor these students attest to the return on investment for them and the individuals. Using a case study methodology to tell the success stories through the lived experience of the participants will support other apprenticeship programs in their diversity efforts. The next four chapters will begin with a review of the literature in Chapter Two that will address a broad focus of research issues that have emerged regarding marginalized groups in the United States and Europe participating in work-based learning programs. Research topics related to the study of

Black males in apprenticeship programs will include the history of Career and Technical Education in the United States and its relationship to their participation, current counseling trends in high school programs, workplace discrimination, and research on pathway systems in the U.S. Three themes will be discussed in the literature: experiences of marginalized groups (specifically students with disabilities, minorities, and low socioeconomic students), barriers to work-based learning, and WBL in career pathways. Research studies showing the impact on employment rates and quality of life after high school will also be introduced. This chapter will conclude with an explanation of the theoretical frameworks underpinning the study. Two theoretical frameworks will be used to guide the research: Social Constructionist Theory as a macro-level theory and Transformative Learning Theory as a micro-level theory. These theories will connect to the topic, apprenticeship completion of Black males, by linking socially constructed ideas that hinder apprenticeship participation to the transformative experience of completing the program. Social Constructionist Theory will be visible in the literature through research that shows the commonly held beliefs about apprenticeship as a post-secondary pathway as less renowned and lucrative than the four-year degree pathway. Transformative Learning Theory will be evident in aspects of the research that speak to the insights and changes that occur through program completion.

In Chapter Three, the multi-case study design will be introduced as a viable qualitative research methodology for understanding the lived experiences of Black, male participants who completed an apprenticeship program and moved into gainful employment with the company. This chapter describes the participants and locations chosen for the study. An intrinsic case study will be performed and replicated with three Black, male apprentices who started in a high school pre-apprenticeship program, completed an apprenticeship, and

became employed by the sponsoring company. The intent of the case study is to capture and understand the lived experiences of Black male students who have persisted and completed a WBL program despite the challenges they faced as part of a marginalized group. This will be discussed along with the rationale for using a multi-case approach to collecting data. Sampling strategies (population, sites, places, times, and other data sources) and data collection techniques as part of a holistic analysis will also be explained (semi-structured interviews, document collection and analysis). The analytic techniques of this case study following the traditional approach of Yin (2009) will be described along with the organization, interpretation and presentation of the data. Finally, ethical considerations for the study will be discussed. The final fourth and fifth chapters will discuss the results and conclusions of the multi-case study.

Chapter II: Literature Review

This literature review provides an overview of apprenticeship through the lens of Social Constructionism as a macro-level theory and Transformative Learning as a micro-level theory to position it as a viable educational pathway that increases the potential for economic mobility among Black males. It examines perception problems and barriers to work-based learning programs and the implications for Black, male participation. Work-based learning is defined in the study as a paid work experience paired with related education resulting in a certification, credential, diploma or degree. The term "apprenticeship" is referred to most often as it is the most recognized form of paid work-based learning represented in the literature and the focus of my research study. The literature review begins with a historical overview of Career and Technical Education (Vocational) programming in the U.S. followed by a summary of the rise and decline of apprenticeship in America from the Colonial period to the present. The juxtaposition of post-secondary CTE with the four-year degree mentality that is prevalent in current post-secondary planning for high school students is also presented. Apprenticeship participation is discussed as a return on investment and a benefit for all stakeholders through case study data from the U.S. Department of Commerce and reports on apprenticeship as a pathway to prosperity for the forgotten half. The focus is then shifted to apprenticeship participation of Black males. In this review, the research relates to Black males who are living in poverty, are underemployed or unemployed and whose interests and abilities may not align with the four-year degree programs encouraged by the secondary education system. The research looks at the persistence of Black males in work-based learning programs through an occupational study of perceived barriers among students of low socioeconomic status. Finally, data is presented on how the

current education paradigm can be transformed through apprenticeship as a pathway to prosperity.

Career and Technical Education in the United States

Beginning with the Smith-Hughes Act of 1917, states have been required to form vocational boards to receive federal funds for career-based activities. This act, which was the basis for the promotion of vocational education in public schools, also set it apart from the general education coursework (Howze, 2015). It contained specific elements and funding that separated it from other parts of the comprehensive high school curriculum through influence from multiple social, economic and political forces aimed at offering youth an alternative to the general curriculum (Gordon, 2014). At the time of legislation, only one out of 30 adults had a bachelor's degree or higher education attainment, and the objective of the Smith-Hughes Act was to expand CTE schools and programs in order to retain secondary students and prepare them for skilled occupations. A proponent of vocational education funding, Walter F. George, stated that he never thought vocational training should interfere with well-rounded academic coursework, but that the two could be brought together at the secondary level since, "most of our people do not go to college, anyhow" (Gordon, 2014, p. 104).

In the early 1960's, vocational education continued to operate under separate funding for innovative programs and curriculum development, but it broadened its reach by focusing on expansion and promotion of CTE through equitable services for disadvantaged students (Gordon, 2014). The Vocational Education Act of 1963 expanded federal funding to include work-study programs and the nation began to take seriously the disenfranchisement of students due to economics, race, and disability through the authorization of the Elementary and Secondary Education Act (Richard, Clark, & Welch, 2011). Near the end of the 20th

Century, the term “global competition” began to appear in reports like *A Nation at Risk* which highlighted the plight of disenfranchised youth. This report became the impetus for a new school reform movement attributing the international economic decline in the U.S. to low standards and poor performance in the American educational system (Gordon, 2014). With the authorization of the Carl D. Perkins Vocational Act of 1984 on the heels of the report, federal legislation replaced the Vocational Act of 1963 toward two major goals: to improve the skills of the labor force and provide equal opportunities in vocational education (Gordon, 2014). It authorized $125 million to states for work-based learning programs through cooperative education and changed the emphasis in vocational education from expansion to program improvement with attention paid to at-risk populations (Richard, Clark, & Welch, 2011; Gordon, 2014).

The Secretary’s Commission on Attaining Necessary Skills (SCANS) report in 1991 lifted Career and Technical Education from an arcane program to a place of prominence in school reform debate shifting thought away from narrowly defined general academic competencies toward technical skills, interpersonal ability, behavioral traits and motivation (Gordon, 2014). It further connected schools and industry as the skills and competencies needed for successful employment were defined, leading to the National Skills Standards Act of 1994. This act identified the 16 nationally recognized career clusters that have become integral in current work-based learning strategies and career pathway development. Also in 1994, the School-to-Work Opportunities Act was passed to address the national skills shortage by supporting business and education partnerships in the development of preparation programs that would afford students the labor market knowledge, skills and abilities to make a seamless transition from secondary to post-school employment (Gordon,

2014). It allowed the use of federal funds for a school-to-work transition system in which all students were to be provided the opportunity to receive comprehensive school guidance and participate in work-based learning activities (Richard, Clark, & Welch, 2011). CTE developed over time as thousands of high schools and community colleges created courses of study to prepare students for both career and college as post-secondary options (Gordon, 2014). In the 1990's, vocational legislation required states to promote the integration of academic and CTE coursework. Funds were set aside for new programs to link secondary to post-secondary programs called College Tech Prep (Gordon, 2014). Even though college attainment steadily rose during the 1990's, the term "vocational" remained restricted by definition as it related to training for an occupational skill within Career and Technical Education (Gordon, 2014).

At the end of the 20th Century, The Workforce Investment Act of 1998 ignited a new era in job-training consisting of a state workforce investment board, the mandatory development of a five-year service plan and a local delivery system with one-stop delivery systems (Gordon, 2014). The law required that these one-stop training centers provide core services and access to intensive training programs and that their governing boards be comprised of both industry and education partners. After its initial implementation, Perkins legislation was reauthorized twice, first in 1990 and again in 1998, deepening the reach of the Federal government in monitoring the states' ability to prepare students and adult job seekers for careers in the 21st Century (Richard, Clark, & Welch, 2011). Special populations were defined in the law in the 1998 reauthorization to include individuals with disabilities, from economically disadvantaged families and individuals with other barriers to educational

achievement. Work-based and work-site learning were also defined under Tech Prep as an integrated form of learning to be utilized where appropriate and available (Gordon, 2014).

In the early 2000's The Elementary and Secondary Education (ESEA) was branded as "No Child Left Behind" (NCLB) aiming to ensure that all children were afforded the same opportunity for a quality education through mandated accountability measures (Howze, 2015). Brand (2003) highlighted NCLB's complement to CTE programming through its efforts to close the achievement gap, align with other federal acts and provide effective transition into post-secondary experiences including attainment of industry credentials and post-secondary degrees. In 2006, legislation was revised in the Carl D. Perkins Career and Technical Education Act to replace the term vocational education with Career and Technical Education. It also redefined vocational education to include career preparation activities leading to a baccalaureate degree (Gordon, 2014). It heavily emphasized the alignment of secondary and post-secondary education, opportunities for post-secondary credit while in high school, industry-recognized credentialing and career clusters and pathways. States were required to address funding and support focused on special populations, preparation for high-skill, high wage occupations, and support of local partnerships (Gordon, 2014).

As reauthorization issues of the Perkins Act loomed in 2012 around involvement of local business and industry in the development and maintenance of CTE programs and maximization of CTE instruction to ensure academic and technical proficiency, research by the Harvard School of Education had just been published in the 2011 report *Pathways to Prosperity* re-igniting interest in movements aimed at better connecting school curriculum with workforce needs (Symonds, 2012). The report called attention to skills and opportunities deficits created by an educational system that had overlooked the silent majority of students

marginalized by race, gender, ability and socioeconomics. A year prior, in the spring of 2010, selected leaders, advocates and partners of CTE committed to a revitalized vision for the future of education that is inclusive of all learners and prepares every student for educational and workplace success (Gordon, 2014). Defining CTE as a preparation program for both college and careers would eliminate the perception that students must choose between the two by separating them into the categories of college-bound and non-college bound. Among the goals of CTE advocates were alignment with nationally recognized career clusters, active partnerships with employers to design and provide dynamic programs with work-based learning components, and a results-driven system that demonstrated a positive return on investment (Gordon, 2014). In 2014, the Workforce Innovation and Opportunity Act (WIOA) was passed with overwhelming bipartisan support. It replaced the Workforce Investment Act (WIA) of 1998 and included progressive language related to the delivery of career services in the public sector. It addressed barriers to employment opportunities and elevated the importance of creating clear career pathways for job seekers and employees. The legislation required that more work-based learning opportunities be provided for hands-on learning through apprenticeships and on-the-job training (OJT) opportunities (LaRose, 2015).

Work-based Learning Contexts

Following the changes in CTE legislation, work-based learning initiatives and best practices in the United States have been replicated and built upon from state to state over the decades (Shumer and Digby, 2013; Anderson, 2015). In its truest form, work-based learning is an instructional strategy aimed at connecting students at every educational level to industry professionals who can foster a deeper understanding of the skills, educational requirements, and context of a specific career field. The U.S. Department of Labor (USDOL) defines it as a

combination of on-the-job training and related education in which participants learn aspects of a high-skill occupation (Crosby, 2002). In accordance with Crosby (2002), it facilitates a reciprocal relationship between schools and employers and is an educational pathway grounded in work-related learning.

CTE Apprenticeship programs, the most formal pathway to work-based learning in the U.S., meet the need for developing high-skilled workers that can fill the jobs needed to compete in a global economy. They not only build a career foundation while affording students the opportunity to earn money, but also provide a career boost that instruction alone cannot provide (Torpey, 2013). In addition to providing students with a full salary while they learn in the context of a real work setting, apprenticeships ensure that the training aligns with the skills needed to fill important jobs. The Organisation for European Economic Co-operation and Development (OECD) launched two studies from 2007-2010, *Learning for Jobs* and *Jobs for Youth.* The co-published studies by the OECD concluded that countries with strong, formal apprenticeship participation averaged higher post-secondary employment rates. In European countries like Germany, where vocational training through apprenticeship is more widely implemented and better connected to employment needs, 80% of graduates found full-time employment within six months compared to 48% in the U.S. (Symonds, Schwartz, & Ferguson, 2011).

With youth experiencing the lack of a clear connection between programs of study and tangible labor market opportunities, research indicates that apprenticeship is gaining renewed political momentum in the U.S. as a post-secondary educational opportunity that engages students and provides large economic incentives (Symonds, Schwartz, & Ferguson, 2011). The Obama administration increased spending to scale up apprenticeship programs

that pair hands-on learning with related academic instruction, recognizing that investment in skilled-labor yields added productivity and greater future earning potential (Holzer & Lerman, 2014). In 2016, the Workforce Innovation and Opportunity (WIOA) amended its funding requirements to provide clear opportunities that more fully align and integrate work-based learning strategies into the public workforce system. The strategies laid out by the USDOL strengthen registered apprenticeship as a resource, a training strategy, and as a partner in creating gainful employment opportunities. While WIOA funds may be used to cover some apprenticeship costs, it is ultimately up to state and local workforce development boards to make the money available. For this purpose, the USDOL has released technical guidance and other resources designed to facilitate the use of workforce funds for apprenticeships (Olinsky & Ayres, 2013). Olinsky and Ayres (2013) cite Keen who states that deliberate policy-making can address the obstacles to more widespread implementation of apprenticeships in the United States, "and expand access to a training system that has been proven to raise workers' wages and boost businesses' bottom lines" (p.38).

The History of CTE Apprenticeship

Gordon (2014) states that apprenticeship is the oldest known type of vocational education in the United States and has long been used as a method for developing workplace competence. Apprenticeship came to America in the early colonial period resembling European models that were modified to suit conditions in the New World. Apprenticeship was the sole opportunity for the poor to be educated in Colonial times. Though it was considered to be the most important educational agency of the period, it was not regarded as part of the school curriculum (Gordon, 2014). Two types of apprenticeship existed in the U.S., voluntary and involuntary. Voluntary apprenticeships were based on European

tradition. They were entered into town records, but not subject to legislation. Involuntary apprenticeships were developed for poor children and orphans in which a master, not the town, became responsible for their occupational education. Apprenticeship agreements were made for five to ten years with both boys and girls and included food, clothing, shelter, religious training, general education and skills training. The contract or indenture between the apprentice and mentor was written and signed with a witness and recorded as a public document. At the conclusion of the apprenticeship, it was acknowledged by the master at a town forum and entered into official minutes (Gordon, 2014).

The first major development in apprenticeship was in the 19th Century with the emergence of private trade schools. Students were apprenticed under members of the board of trustees of the schools and were offered a combination of trade and general education. This was heavily influenced by the Factory Act of 1802 passed in England which required instruction for apprentices and limited the number of hours children could work (Sanderson, 1967). The rise of an industrial revolution in America saw the beginning of the decline of apprenticeship as an educational institution. With a heavy increase in the demand for manufactured goods, occupations like machine operators no longer needed long apprenticeships to learn their trade. Personal guidance and instruction from a master craftsman, a hallmark of apprenticeship, were lost. The factory system had the largest impact on apprenticeship in the 19th Century as large groups trained to work in a specific task replaced small forces of labor. Industries became centralized and developed subdivisions for which training was expensive. Trades became overcrowded with apprentices who were no longer taught the technique of the craft while being kept at a low wage. Elbaum (2008) posits that unlike Europe, the United States guild traditions were weak, occupational certification

was seldom required, and, as a result, indenture obligations were hard to enforce. Consequently, U.S. employers avoided making training investments in potentially mobile apprentices. Meanwhile, new systems of education and training began to surface including free public elementary schools, and workers began to learn job skills from parents or on-the-job training programs. Slavery in the U.S. also brought with it a decline of White indentured servitude (Gordon, 2014).

The second development in apprenticeship came through public school programs which offered opportunities for manual training, commercial training and domestic science. The curriculum focused on improved perception, observation, practical judgment, visual accuracy and manual dexterity with a focus on doing things instead of talking and thinking about them. By the 20th Century, students were using manual training for vocational purposes. Apprenticeship became more intentional, and a separate system of instruction was developed called Vocational Education (Gordon, 2014). The thinking of Rousseau and Pestalozzi had great influence on the development of apprenticeship within Vocational Education creating a platform for training to spread across Europe and the U.S. Rousseau viewed manual training as a means to permit a more natural form of learning through interaction with the world and senses. His ideas about the use of manual arts for mental training paved the road toward its implementation. Pestalozzi added the idea there should be educational methods based on the facts of society that cultivate both the act of learning and the desire to learn in all children. He believed that students must learn to do through manual labor (Gordon, 2014). The European influence of the 19th Century was evident as forms of apprenticeship evolved during industrial, manual, career and vocational education models that would eventually become Career and Technical Education.

Today, apprenticeship is the product of an evolutionary process continually changing the federal role in CTE. As World War I cut off access to skilled immigrant labor, the National Association of Manufacturing (NAMS) began to recognize that the factory system had destroyed apprenticeship as a source of developing a skilled workforce. By 1934, a Federal committee was formed to address apprenticeship training, and in 1937 the National Apprenticeship Act made a legal provision to continue the development and establishment of apprenticeship programs by adding standards to guide industry in employing and training apprentices (Gordon, 2014). By the 1940's recommendations by the International Labor Organization were adopted in many states that included written terms of an agreement between the industry and apprentice, learning schedules, wage scales, and attendance in classes for related instruction. Apprentices today are high school or adult aged and still work under the terms of the formal agreements set out by the act. The average age of an apprentice is 25 years old (Gordon, 2014). They earn real wages and live in their own home, unlike participants in the Colonial era. Wages are about half that paid to full-time workers, but advance as skills are learned. The length of the apprenticeship and the wage scale depends on the occupation and related instruction. Apprenticeship, however, exceeds return from other types of training in post-program earnings with a net of over $50,000 for the first 2.5 years after completing the program (Hollenbeck & Huang, 2006). Because students learn hands-on at the company while learning the theoretical side of the occupation in the CTE classroom, the model requires organization and coordination among many entities to create successful programs. Apprenticeship has evolved in the U.S. as part of a government credentialing system designed to develop specific skills and competencies leading to journeyman status. A

journeyman certificate is a portable credential recognized by the USDOL as part of a registered apprenticeship program.

In the 21st Century, registered apprenticeship encompasses a broader range of industry sectors than historical programs created for skilled trades like construction and manufacturing. Today, green-related technologies, health care, energy and information technology have been added to the array of occupations that create excellent CTE pathways to high-skill, high-wage occupations that support economic mobility. Modern-day apprentices receive college-level coursework and career training gaining the education and experience necessary for success in a global economy. Hollenbeck and Huang (2006) state that typical completion standards include around 2000 hours of coursework and a minimum of 144 hours of related or supplemental instruction. There are 470,000 apprentices in programs registered with the USDOL and possibly that equivalent or more in unregistered programs, creating questions around issues of industry participation.

Lerman and Rauner (2012) found that despite the advantages of apprenticeship for the apprentice, industries have perceived barriers to registering apprenticeship programs. Many are concerned about control by trade unions and the fear that non-training companies will pirate their apprentices leaving them with the cost of training. Industries also cite the expense of building infrastructure within the business to support apprenticeship training as a deterrent. In response, many states have created incentives to support and attract industry. Recently, North Carolina passed legislation waiving community college tuition costs for companies who register apprentices before high school graduation. Employers cover the majority of costs associated with secondary apprenticeship programs, primarily in the form of apprentice wages and registration fees. While the state currently does not offer tax

incentives for businesses to develop apprenticeship programs, the North Carolina Community College System covers tuition for students registered while still in high school. There is no fee to register students. Other states, however, offer tax credits for companies who host apprentices (Rice, Hudson, Foster, & Klein, 2016). Government oversight and regulations still deter some companies from participating. Gordon (2014) found that companies do not want to deal with government requirements, citing specifically the implementation of mandatory, bona fide plans for the recruitment and retention of minority apprentices for companies with 5 or more participants.

Minority and Black, Male Participation in Apprenticeship

Black participation in apprenticeship can be traced back to the 1600's. From 1619-1846 there were many apprenticeship and manual labor programs available to slaves (Gordon, 2014). In 1881, Booker T. Washington was selected to open a new vocational, private industrial institution called Tuskegee based on the principles of cognitive problem-solving skills and learning by doing. The school was placed on 2300 acres of land with 123 buildings and vocational programs ranging from electricity, machine shop, and bricklaying to painting and basket making (Hall, 1973). After the Civil War period, Booker T. Washington and Frederick Douglass spoke strongly about expanding vocational training for African Americans. The belief that industrial education would build economic self-reliance and better integrate Blacks into industrial America had other Black leaders of the time like Dubois speaking out that this ideology was acceptance of a sub-standard of living for the Black race (Hinman, 2005). From 1910-1930 public secondary programs began offering manual training for Black students to address rural, poor and uneducated African Americans in the South and the high attrition rate in high school (Gordon, 2014). In the 1930's, industrial advancements

demanded more skilled workers and White schools began emphasizing industrial training to claim access to the higher paying jobs. Moreover, the National Apprenticeship Act of 1937 was initiated during a time when Black students were offered more academic education and less vocational training likely leading to lower participation in certain careers and contributing to greater economic disparity (Gordon, 2014). Though strides toward more equality for special populations were made possible in the 1960's through legislation like ESEA, Maurizi (1972) found the USDOL's new programs of the time geared toward equal job opportunities for minority participation in registered apprenticeship to lack the support for implementation. The program required that the percentage of minority apprentices at the company match the percent of minority participation in the local labor force or face termination of the program. Though it received resounding support from minority groups, organized labor groups pushed back on the recommendation citing the difficulty in finding eligible or interested minority candidates (Maurizi, 1972). The concerns around minority participation continue today. McKinsey and Company (2009) asserts that it impacts the prosperity of a society as confinement to certain job opportunities reduces the economic mobility of a demographic group. In the U.S., nearly three-fourths of apprentices are White, while Black males participate at a rate less than 15% (Case Western Reserve & United States Department of Commerce, 2016). In 2016, the Equal Employment Opportunity Commission (EEOC) released updated regulations for programs registered through the USDOL. The USDOL states that the new regulations are designed to help businesses reach a larger and more diverse pool of workers, and that "When all workers, including women, minorities, and individuals with disabilities, have the opportunity to become apprentices, we tap into our nation's full potential and open new career pathways for American workers" (U.S.

Department of Labor, n.d.-b). Companies sponsoring apprenticeship were allowed 180 days to come into compliance with the new non-discrimination protections, and up to two years to come into compliance with obligations related to their Affirmative Action Programs (AAPs). Despite pushback from potential sponsors the USDOL maintains that the updates reflect the workplace of the 21st century along with modern approaches for increasing diversity and protecting against discrimination (U.S. Department of Labor, n.d.-c).

Major Trends and Findings

Despite a push in legislation and increased economic support for apprenticeship programs, an obstacle that remains for stakeholders is the perception of taking a non-baccalaureate pathway for post-secondary education. Richard, Clark, and Welch (2011) researched a work-based learning program in Pennsylvania that uncovered nearly 20 barriers associated with work-based learning participation. The results were grouped and ordered by statistical significance. In the study, the most significant barrier was how stakeholders view work-based learning compared to traditional core academics. The study found that work-based learning was commonly held in low regard and viewed as a distraction from other academic pursuits (Richard, Clark, & Welch, 2011). *Pathways to Prosperity* 2011 poked holes in the "college for all" rhetoric that has permeated the American education system, stating that, "if the U.S. is going to make dramatic progress in reclaiming its historic leadership in post-secondary attainment, it is going to have to focus much more attention and resources on programs and pathways that do not require a bachelor's degree, but do prepare young people for middle-skill jobs" (Symonds, Schwartz, & Ferguson, 2011, p. 6). Olinsky and Ayers (2013) cite scholar James Rosenbaum who argues in his book *Beyond College for All*, that secondary schools caught up in the "college for all" myth, provide little job advice or

preparation and lead students to make unachievable post-secondary plans that hinder those who do not go to college and who start college but drop out.

The Four-Year College Norm

Beal and Crockett (2013) assert that preparing for one's future education and occupation are core challenges of adolescence. Schooling is viewed as preparation for a future career. They cite multiple factors that shape the content and formulation of occupational and educational goals by adolescents including personal preferences, perceived abilities, perceptions of prestige, and beliefs about gender roles. They contend that higher levels of educational attainment are commonly viewed as entry into higher status and higher paying professions (Beal & Crockett, 2013). Goyette (2008) asserts that this results in the entrenchment of the "college for all'' norm to achieve a bachelor's degree that has risen over time. As more parents of students have themselves completed college degrees, the expectations have risen for their children. Additionally, the educational requirements of students' occupational goals have changed toward jobs that require bachelor's degrees, despite a mismatch with the available jobs in the U.S. (Symonds, Schwartz, & Ferguson, 2011). As a result, students have become increasingly less likely to associate the expectation to attain a bachelor's degree with their socio-economic background. Most students perceive college to be part of the life course, a rite of passage, for all young adults whether they obtain a degree that leads to a job or not (Goyette, 2008). Ou and Reynolds (2014) found that one consequence of the gradual increase in educational expectations has been a decline in the ability to predict the proportion of students who expect to attain a four-year degree compared to those who actually will achieve it. Meanwhile, the College Board's goal of raising the baccalaureate completion rate to 55% by 2025, has created questions about the outcomes for

the other 45% who lack the skill sets to take the 69% of jobs that do not require a four-year degree (Symonds, Schwartz, & Ferguson, 2011). Students who do not attempt or who do not complete a baccalaureate degree often settle for jobs that offer less in pay or benefits than careers for which they could have entered through an apprenticeship (Symonds, Schwartz, & Ferguson, 2011).

Apprenticeship Completion

Persistence and completion rates in apprenticeship programs tend to be higher than other post-secondary programs. When structured appropriately, research shows that students who participate in work-based learning programs have lower dropout rates and benefit from higher attendance, graduation and college enrollment rates than their peers (Hoachlander, 2008). The USDOL indicates that 91% of apprentices complete their program and find employment (Shulz & Peterson, 2016). This can be attributed to the fact that students in an apprenticeship program see a direct link between what they learn in the classroom and solving problems in applied settings. Moreover, apprenticeship proves to be a successful combination of learning and application for young people not entirely successful in traditional academic settings (Holzer & Lerman, 2014). In accordance with Bailey (1993), the apprenticeship movement breaks down conceptions of learning vs. work, school vs. community, academic vs. vocational, and college-bound vs. non-college bound. It facilitates a reciprocal relationship between schools and employers and is an educational pathway grounded in work-related learning.

Wage Potential for Apprentices

Perceptions of wage potential and economic mobility, however, have hindered participation in alternative post-secondary pathways like apprenticeships. The primary

emphasis on addressing wage gaps in the U.S. has been policies aimed at expanding four-year college enrollment and increasing graduation rates (Lerman, 2009). McKinsey and Company (2009) found that the United States gets 60% less per education dollar spent than other wealthy nations due to achievement issues. Given the high per capita income in the country, which is generally associated with higher levels of educational achievement, some have concluded an accurate correlation between the baccalaureate degree and the rising wage gap to be overdrawn (McKinsey & Company, 2009). Nearly half of all workforce vacancies demand mid-level occupation skills that yield good wages, achieved by a combination of education and work-based learning. Apprenticeships provide a viable training option to these careers and a path to skill development and higher wages for those students who do not go to college or who do not finish college (Olinsky & Ayers, 2013). Wage-earning potential among work-based learning participants is projected to be 18% higher than the students who do not participate (Voytek & Zimmerman, 2015). The payoff, according to the USDOL, is clear with the salary of an apprenticeship completer averaging $60,000 per year (U.S. Department of Labor, 2010)

Economic Mobility and Apprenticeship

Studies have shown that work-based learning can have positive implications for employment rates and quality of life after high school (Guy, Sitlington, Larsen, & Frank, 2009). Apprentices earn certificates and industry-recognized credentials that are widely accepted, affording them increased occupational mobility. These students are in a position to go anywhere in the U.S. and get a job above entry level in a short amount of time (Torpey, 2013). Case Western Reserve and United States Department of Commerce (2016) concluded in their study that apprenticeships offer workers compensation for occupational-specific

training which provides a pathway into a career with higher earnings. In a ten-year study of the demographics and pre-enrollment earnings of registered apprenticeship programs in the U.S., the effectiveness of raising annual earnings and employment potential was examined. The study found that over their career, participating apprentices earned an average of $98,718 more than similar non-participants. Apprentices who completed a registered apprenticeship boasted $240,000 more in earnings than similar non-participants (Reed et al., 2012). Case Western Reserve University and United States Department of Commerce (2016) cites evidence that apprenticeships in unskilled and semi-skilled occupations serve as an investment in human capital, yielding a profit for both the apprentice and the company over time, whether the payoff occurs during the apprenticeship period or not.

Businesses' Return on Investment

Lack of clarity in the business community about the merits and advantages of apprenticeship as an educational pathway has hindered its implementation. In the report *Opportunity for Action,* Bill Reese, President and CEO of International Youth Foundation, makes a case for industry leaders to support a dramatically greater investment in today's young people by marketing and providing targeted training programs that include work-based learning and job placement services (International Youth Foundation, 2012). The foundation asserts that the U.S. training system has not evolved to serve young adults in a rapidly changing world. Most advanced nations place great emphasis on vocational education, where classroom and workplace learning are mainstream ideas and employers play a major role (Symonds, Schwartz, & Ferguson, 2011). In the United States, however, the case for or against vocational training remains unclear. Several negatively perceived factors prevent full utilization of paid work-based learning programs including added training costs,

attrition of trainees to competing companies, and the inability to quantify improved productivity through training (Yingwang, Goodrum, Haas, Glover, & Vazari, 2010). In accordance with Callan (2008), industry can do many smart things in design and delivery, but implementation still comes down to the employers' attitude toward apprenticeship. The companies interviewed in this research highlighted evidence of cracks in apprenticeship training caused by low completion, noting that some apprentices have difficulty finishing the required levels of learning, study, and assessment within the required amount of time. Other respondents cited evidence that employers may attempt to hold back apprentices to drive cheap labor and minimize the financial cost to them during the period of training (Callan, 2008). Case Western Reserve University and United Stated Department of Commerce (2016) noted that the key to a company sustaining apprenticeship over time is to balance the interests of the employer, the apprentice, and the incumbent workforce. They noted that too often, employers focus on their short-term interests and fail to calculate the return on investment over time (Case Western Reserve University and United States Department of Commerce, 2016).

Benefit-to-Cost Comparison for Businesses

In a study of 13 companies in the construction industry, Yingwang et al. (2010) applied an economic model to apprenticeship programs based on a benefit-to-cost ratio (standard b/c). The data that was generated supported the economic value of work-based learning training by identifying expected changes in conditions like productivity, rework, turnover, absenteeism and safety among training participants. They assert in their research that an economic model can be utilized to overcome barriers and negative perceptions held by industry about the worth of work-based learning opportunities. The Canadian

Apprenticeship Forum (2006) affirmed this in their research by calculating the benefits and the costs of hiring an apprentice for one year. The costs included wages, benefits, opportunity costs, disbursements and administration. These figures were divided into the benefits in which the numerical value generated by revenue (total chargeable hours and charge-out rates) was determined for each apprentice at the company. It was found that for every $1.00 invested in apprenticeship training, the company accrued $1.38 in return (Canadian Apprenticeship Forum, 2006). In 2016, the Case Western Reserve University and United States Department of Commerce report *The Benefits and Costs of Apprenticeships: A Business Perspective* became among the first of its kind in the U.S. to capture the employer perspective on the value of the apprenticeship model. The report found that few companies utilized a standard method of calculation for determining the internal return on investment for their apprenticeship program. The companies studied were unanimous and enthusiastic in finding that the benefits outweigh the costs of their participation. Siemens USA, a manufacturing company in Charlotte, NC, touted a 50% return on investment for every apprentice, noting that one year of this additional capacity is worth an amount similar to the cost of a worker's entire apprenticeship program. They further noted that apprentices were more likely to finish their work on time with better productivity than employees hired off the street (Case Western Reserve University & United States Department of Commerce, 2016). Another study found that apprenticeships return nearly $28 in benefits for every dollar of government and worker costs spent because apprenticeships are driven by employer demand and mismatches between the skills taught and skills demanded for employment are less likely to occur when training is provided (Reed et. al, 2012).

Equity and Access in Apprenticeship Programs

Rainbird (2000) asserts that in the debate of how to skill the unskilled for employability, there is little emphasis placed on the patterns of inequality related to access to work-based learning programs. Unskilled workers, who often enter the workforce with poor educational experiences and who are unlikely to seek formal learning outside of the workplace on their own, are the least likely to receive training in the workplace. Demographic characteristics of apprenticeship programs released by Mathematica Policy Research showed that 68.6 % of participants in apprenticeship across the U.S. were White males (Reed et al., 2012). Black males were the least represented group at 13.5 % falling behind Hispanic males at 16.6 %. Additionally, Black female apprentices participated at a higher rate than Black males at 23 % (Reed et al., 2012). Gradin (2010) found that though the unequal distribution of population groups across occupations has received considerable attention, occupational segregation associated with skill-related attributes has been ignored.

Black Males and Apprenticeship Participation

The perceived human capital of Black workers has received little attention in the research (Gradin, 2010). This is cause for great concern as it relates to achievement and wage gaps that exist between privileged groups and underserved populations. In accordance with McKinsey and Company (2009), the prosperity of a society is determined by the extent that it utilizes its human potential. Confinement of a demographic group to certain job opportunities reduces their ability to earn income and gain social recognition, especially when the jobs are low paying, regardless of skill-level. Additionally, the level of human capital determines the types of jobs for which the applicant qualifies, while potentially causing exclusion from certain jobs due to skills gaps (Gradin, 2010). Lerman (2009) posits

that apprenticeship is appealing as a way of integrating minorities, particularly men, into rewarding, highly technical careers. “Having learning take place mostly on the job, making the tasks and classroom work highly relevant to their careers, and providing participants wages while they learn can give minorities increased confidence that their personal efforts and investments in skill development will pay off” (Lerman, 2009, p. 2).

Societal Factors and Work-based Learning Completion

Research shows that social factors play a significant role in a student’s outlook on successful participation in work-based learning. Mastering a skill by completing an apprenticeship gives Black, male graduates a genuine sense of occupational identity and pride and is appealing as a way to integrate them into rewarding careers. How a student performs is also influenced by both socioeconomics and family background (Dauber, Alexander, & Entwisle, 1996). Shuette, Ponton, and Charleton (2012) found that fear of estrangement from the community and risk of failure lowered career aspirations for some minority participants, including Black males, due to a lack of understanding about the world of work. Goyette (2008) likewise found that students from diverse backgrounds had perceptions of the workplace that did not mirror reality. Ryken (2006) concluded that by utilizing work-based learning to explore possibilities and opportunities, Black male students are likely to be more realistic about prospects for the future and crystallize their career decisions toward completion of a goal.

Work-based Learning Barriers

Issues of participation and completion of work-based learning programs by minority student populations are complex. Barriers to completion are often generated by a variety of factors. Isolation is often created in the work-based learning setting because students learning

in an industrial environment do not have the peer support they had in the large, traditional classroom. Thus, marginalized students might require targeted support to overcome issues of engagement in the work-based learning setting (Johnson, 2001). Daviso and Textor (2013) posit that there is often a lack of training on the part of instructors to modify the delivery of work-based learning. For marginalized students, this negatively impacts the effectiveness of the experience. Furthermore, increased demands in core academic accountability have been found to be a statistically significant barrier to work-based learning, decreasing the motivation for marginalized students to participate (Cease-Cook, Fowler, & Test, 2015; Johnson, 2001). Expanding opportunities for low-income, minority students requires a comprehensive effort to improve core instruction while addressing learning needs of individual students through multiple pathways (Symonds, Schwartz, & Ferguson, 2011). However, students have been forced to spend more time in the classroom and less time participating hands-on in a work-based learning environment due to stringent academic requirements for Career and Technical Education coursework (Richard, Clark, & Welch, 2011).

Work-based Learning as a Pathway to Prosperity

Symonds, Swartz and Ferguson (2011) contend that youth who are deprived of meaningful work-related experiences often pay a permanent price. Stone & Aliaga (2003) conducted a participation study of low-socioeconomic and minority students finding that a career pathway, with the opportunity for contextual learning and skill development, was more beneficial than a core academic pathway alone. These students, according to Goyette (2008), are more likely to experience the transition to post-secondary education by less predictable paths compared to their socially advantaged counterparts. This unpredictable

pathway leads to decreased or delayed entry into post-secondary education, increased likelihood of transfer, and a higher probability of not finishing their degree. Career pathways are frequently cited in the research as a vehicle for productive work-based learning programming, a core component that promotes high rates of post-secondary participation and completion among students (Hoachlander, 2008). This is echoed by Ryken (2006) who found that the greatest impact for marginalized students is found in programs that connect student learning to a larger curriculum theme or visible pathway to employment.

The Apprenticeship Pathway

The apprenticeship model is considered by the USDOL to be a pathway in itself (U.S. Department of Labor, n.d.-a). Apprenticeship has the potential to elevate the critical importance of relevant work and is the best place to test out a career choice (Symonds, Schwartz, & Ferguson, 2011). It is a well-kept secret that provides an effective pathway to jobs, yet it is part of a Career and Technical Education pathway that is often disparaged by the Nation's elite. Often seen as a pathway for "other people's kids," especially in secondary settings, it is ignored as critical to the future of the economy (Symonds, Schwartz, & Ferguson, 2011, p. 29). Industry cannot solve the challenges of creating a viable workforce without support from government agencies and educational institutions (Deloitte, Oracle, & The Manufacturing Institute, 2009). Rainbird (2000) posits that until training and skill development programs are treated as a collective good in society and industry is granted the support structures for work-based learning, patterns of inequality and access will continue to be a challenge. It is important to revisit the historical beginning of work-based learning funding to see how cultural biases have formed existing barriers. As previously noted, workforce funding in 1917 through the Smith-Hughes Act, set vocational training apart from

traditional academics. (Symonds, Schwartz, & Ferguson, 2011) contend that this set the stage for deeply rooted prejudice, making vocational programs a “dumping ground for minority students” (p. 29). Likewise, Black participants in European programs have shown concern that apprenticeships are exploitative and inferior (Learning and Skills Council, 2009). Stone and Aliaga (2003) produced a study of participation patterns finding that the majority of participants who were members of lower-income households questioned whether the data had uncovered a tracking system that may further disenfranchise them. They conceded in their findings that a pathway of opportunity for contextual learning and skill development was more beneficial than a core academic track for these students. Research shows, however, that apprentices recognize that not everyone benefits equally from the apprenticeship opportunity. In a Department for Innovation, University and Skills, and Department for Children, Schools and Families (2008) study commissioned by the Learning and Skills Council, 100 learners from marginalized populations were part of a study aimed at uncovering the reasons behind inequality in apprenticeship programs. Participants acknowledged that they had been faced with subtle forms of discrimination throughout the process. They also disclosed that barriers to employment on the national level also existed for them in the apprenticeship setting (Learning and Skills Council, 2009). In accordance with Lerman (2016), the potential to exacerbate inequality in apprenticeship occurs when less effective education and training for marginalized groups impacts job distribution that is dependent upon skill development.

Apprenticeship Through Social Constructionist and Transformative Learning Theories

A theoretical lens orients the perspective of qualitative research and shapes the research questions to study issues of marginalization from a gender, class or race perspective

(Creswell, 2007). From this, a theoretical framework is applied that provides a distinct point-of-view, establishes the need for the study, the problem to be addressed, the research design, the data collection, and the analysis. This framework stems from the researcher's view of knowledge and drives the research topic and research questions (Merriam & Tisdell, 2015).

Two theoretical frameworks will be used to guide this study: Social Constructionist Theory as a macro-level theory and Transformative Learning Theory as a micro-level theory. These theories will connect to the topic, apprenticeship completion by Black, male youth, by linking socially constructed ideas that hinder apprenticeship participation to the transformative experience of completing the program, making a case for the viability of it for all stakeholders. Social Constructionist Theory is visible in the literature through research that shows the commonly held beliefs about apprenticeship as a post-secondary pathway that is viewed as less renowned and lucrative than the four-year degree pathway. Transformative Learning Theory is evident in aspects of the research that speaks to the insights and changes that occur within the individual through program completion.

Trends and Findings in the Literature. Despite the recent concerns about the American economy around skills and wage gaps, exploring ways outside of a baccalaureate degree to address these issues in our homes, on our school campuses and in our industries, is still not wide-spread. Students continue to struggle through post-secondary completion while industries continue to struggle to find the qualified employees they need for growth. Research suggests that in 2018 the impact on the American economy will be severe (Symonds, Schwartz, & Ferguson, 2011). There is a greater urgency to address the skills gap than ever before. Adding to the troubling trends in the economy are the findings that the college for all norm pushes most students into a pathway that they will either not complete,

resulting in underemployment, or receive a degree that will not produce a job in their field, requiring more training (Symonds, Schwartz, & Ferguson, 2011). This highlights the need to change the social constructs about what viable post-secondary pathways are and to shed new light and understandings on the benefits of vocational education. It is for this reason that Transformative Learning Theory is used as a micro-level theory with Social Constructionism - to frame the stories of students who have experienced the economic benefits and personal success of an apprenticeship and have become empowered by them.

The Social Constructionist Perspective: Policy and Institutional Contexts. To effectively understand and address the circumstances and issues of apprenticeship completion by Black males, it is critical to identify the social constructions under which post-secondary planning has evolved since the Smith-Hughes Act of 1917. Understanding the perceptions of stakeholders around post-secondary attainment in the context of historical, political policy can provide valuable information on how to change social constructions that impede the promotion of apprenticeship as a worthy and viable post-secondary option in homes, schools and industries. It is of specific importance to challenge current paradigms that have been sustained across time due to assumptions that are dependent on the changes of social processes like communication, negotiation, conflict and rhetoric (Gergen, 1995). How we communicate about other groups of people (college bound or not college bound) and how they are described can change our understanding, perspectives and views about a position for which observation alone cannot (Gergen, 1995). Historical policy measures like ESEA have contributed to how ideas and knowledge around apprenticeship programs were constructed. Recent policy measures like WIOA along with reports from leading higher educational institutions like Harvard have done little to minimize the failure of institutional practices in

the K-12 system and in industry to embrace apprenticeship as a worthwhile endeavor. It is important to continue to engage with the social constructionist framework as we build new knowledge toward understanding the benefits of apprenticeship completion for Black males.

Critique and Evaluation of Transformative Learning Theory. When educators and parents approach post-secondary planning with students, they use what Mezirow refers to as a frame of reference. Problematic frames of reference (mindsets, habits of mind, meaning perspectives) are embedded in paradigms. These paradigms or "universally recognized scientific achievements" that, for a time, provide model problems and solutions to a community of practitioners" (Mezirow, 2000, p.viii), have led to a common worldview in American education. This view frames vocational education as a track for "other people's kids" and a perspective that four-year degree attainment is the best solution to combat issues of poverty and inequality. Shifting this paradigm would be difficult to accomplish without strong theory because some may perceive this action to be the reinvention of a tracking system. Mezirow's Transformative Learning Theory can support new paradigms through the research of Black males who complete an apprenticeship and become gainfully employed with a company.

Transformative learning occurs when individuals change their perspective or mindset creating in them greater capacity for inclusiveness, change and reflection. This shift then generates a more true and justified belief system that guides individual actions (Mezirow, 2000). During a time in U.S. history when vocational education is viewed as a distraction from other academic pursuits (Richard, Clark, & Welch, 2011), students and companies who participate in apprenticeship programs go virtually unnoticed as they rave about the benefits. This is why it is important to emphasize in the research contextual understanding, critical

reflection of assumptions, and validation of meaning by assessing the reasons that learners generate their beliefs and opinions (Mezirow, 2000). Mezirow's concept of meaning perspective, the structure of cultural and psychological assumptions embedded in past experience that assimilate and transform new experience, is critical in capturing the cognitive processes experienced by apprenticeship completers. Though Mezirow contends that Transformative Learning Theory is in the cognitive realm, he does accept that there are important emotional changes involved. People's stories and experiences tell much more than a list of facts or numbers can. The telling of how and why an apprenticeship was a good or even better choice for the participant has the potential to transform the old paradigm of post-secondary success into a new way of thinking that can lead to empowerment. This transformation is conveyed through a group of concepts, beliefs, judgments and feelings that shape a particular interpretation (Mezirow, 1985).

Transformational Learning Theory can guide research on apprenticeship toward uncovering habits of mind and capture the learning that takes place. Learning occurs as an individual reveals critical insight and develops fundamental understanding around habits of mind. For transformative learning to occur, there must be a constructive discourse that precipitates the use of others' experiences to justify assumptions and prompt insightful decision-making (Mezirow, 2000). This results in a critical assessment of the assumptions around the sources, nature, and consequences of habits of mind. Habits of mind are constantly at play that prompt students to ignore the post-secondary options available to them in a pursuit (either pseudo or authentic) of an elusive baccalaureate pathway that few will receive. Too often, students, parents and educators operate off of habit of mind with no idea about the benefits or disadvantages post-secondary options have on career choices.

Transformative learning theory can answer questions about how these habits of mind allow more inclusive and thorough thought process about post-secondary selection. The intent here is not to promote an apprenticeship program over a four-year degree, but to ensure that Transformative Learning Theory guides the research to give a voice to the participant's experience, letting it speak to the changes in mindset that occurred. In accordance with Mezirow (2000), transformative learners seek out others with common insights to form cells of resistance to unexamined cultural norms in institutional life becoming agents of cultural change. This aspect of the theory will support research into the interactions of the apprentices with their schools, industries and other apprentices. Further guiding the research of the lived experiences of Black males is the idea that Transformative Learning can occur gradually or from a sudden powerful experience that changes the way people see themselves and their world. At the same time, it has the power to change the structure and the content of the group's consciousness (Kasl & Elias, 2000).

Chapter III: Methodology

Chapter three provides an overview of the research methodology used in a qualitative approach of inquiry to the research study beginning with a discussion of a case study as a viable methodology to answer the research questions. The case study approach rises from the need to understand a complex social phenomenon and the holistic characteristics of real-life events. It involves extensive analysis of an individual unit (like a person, a community, or a program) by highlighting factors in the environment that influence development (Yin, 2009). A multi-case study is a variant of the same methodological framework as a single case study only replicated. In this research study, a multi-site case study allows for an in-depth understanding of the attributes that support persistence and completion of an apprenticeship by Black, male students by documenting what they say are components of successful programming in multiple (three) work-based learning programs. The chapter concludes with an explanation of the role of the researcher, ethical considerations, data collection and analysis procedures.

Research Questions

In accordance with Yin (2009), the more that the research questions seek to explain some present circumstance (the how or why of a social phenomenon), the more relevant is the use of the case study approach. The purpose of this research study is to obtain specific detail from Black, male apprentices about their lived experience in a Career and Technical Education apprenticeship program to view through their eyes the factors that contributed to completion. It further defines a successful apprenticeship program by answering the following overarching research question: 1) “What are the experiences of Black males who were successful in completing a registered apprenticeship program? The research will be

used to obtain specific details from Black male students and related support personnel about circumstances that supported persistence in the WBL program to answer the following subsequent research questions: 2) What are the structures and characteristics of the program in which the marginalized student participated? 3) What roles did adults play (i.e., career development coordinators, school counselors, instructors, school leaders, community mentors, industry mentors, parents/guardians) in the process? 4) What did the Black, male students who completed an apprenticeship attribute to his success/ability to complete? 5) What barriers, if any, did the Black, male student face and how were they overcome?

Research Design

The approach to studying the lived experiences of Black, male students begins with the identification of the type of case. Somekh and Lewin (2011) state that a case study assumes social reality is created through interaction in a particular social context and that it should be identified and described before it is analyzed. The case study design begins with the identification of a specific case and ends with the overall meaning derived from the case called an "assertion" (Creswell, 2007). Merriam and Tisdell (2016) call the specific case "bounded" meaning it is a unit of analysis, not the topic of investigation. It aims at understanding one thing well like a person, program or group. In this study, a multi-case or collective case study will be performed with three apprenticeship completers from different advanced manufacturing work-based learning programs. The complex and diverse nature of the students' journeys to completion of the apprenticeship process from gaining initial access to navigating on-the-job learning and related education at the community college is best demonstrated through a multi-case case study versus one single case. Multiple cases will provide the most compelling and robust data to represent the meanings that the subjects bring

to the study about persistence, completion, and economic mobility. The bounded cases in this multi-case design will include the study of three former CTE high school students who began as pre-apprentices in an advanced manufacturing facility, took the required community college coursework, completed the set hours of on job learning by working as an apprentice and were subsequently hired by the company into a high wage, high skill occupation.

Design Rationale

There are attributes of a case study that distinguish it from other forms of qualitative research that fit this research. First, the intent of the study is important to case study design. Many case studies seek to gain better understanding of a specific issue or problem. Sometimes, as is the case in this research, the intent serves to illustrate something that is of unusual interest in and of itself and needs to be described (Creswell, 2007). To accomplish this, the researcher can conduct what is called an intrinsic case (Stake, 1995). The sites for this multi-case study will be selected based on documented employment of Black, male apprentices who completed a program at the company through a pre-apprenticeship in high school. The intent is to understand and capture the unique experiences contributing to the success of these apprentices and relate this back to the practices of the apprentice program and the organization.

A good case study presents an in-depth understanding of the problem through extensive data collection. This is the most characteristic feature of the design (Creswell, 2007). Interviews, observations and document reviews are types of data in a case study used to provide a framework for understanding the issues. In this research design, the case study will involve a multiple unit analysis of the data by obtaining information about the apprenticeship experience from several different sources (Creswell, 2007). Data will be

derived through an interview process of the apprentice and the people who interacted with the him throughout the experience along with observation of industry setting. Additionally, the collection of documents related to the apprenticeship experience like recruitment materials, work-based learning requirements, and information about their high school CTE programs can provide more data about the experience of the student. Somekh and Lewin (2011) assert that the ability to take multiple methods and data sources to interrogate the problem is the strength of the case study methodology. Finally, themes and issues that emerge from analyzing the data sources help the researcher draw conclusions and make meaning of the study. The attempt of this research to answer the question, "What are the lived experiences of Black males who were successful in completing a registered apprenticeship program?" can capture the impact of the experience by uncovering the circumstances that supported successful completion. From this, assertions can be made that highlight apprenticeship as a catalyst for overcoming the achievement gap, attracting and employing diverse student populations into high-demand industries, and supporting pathways that lead to higher completion of Black male students.

Methods and Sources

Once it has been determined that a case study is the appropriate research design and the cases have been selected, the units of analysis, or samples, must be determined (Merriam & Tisdell, 2016). When the researcher's intent is to understand and gain insight, a sampling technique must be used that will yield the most information. Purposeful sampling is a method that aids the researcher in solving qualitative problems about how things occur, the implications of what occurs and the relationships linking the occurrences (Merriam & Tisdell, 2016). The attempt to understand the success of a Black, male student in an

apprenticeship program at a specific company is tied directly to the relationships formed between the apprentice and the stakeholders. Furthermore, the implications of those relationships for the success of the student and the company are central to the understanding research problem. To perform purposeful sampling, criteria must be established for the sample. The criteria established must reflect the research purpose and be clearly explained and spelled out (Merriam & Tisdell, 2016). The selection criteria will determine which sites and people are used as samples for this study. In these cases, the sample criteria are unique or atypical. The sites chosen were based on the criteria that the industry has successfully supported a Black, male high school student through the apprenticeship experience and employed him. The people interviewed at the site will have to be integral to the successful completion of the placement by the student. Likewise, the participant will have to meet unique criteria including identifying as Black and male, completing an apprenticeship that started in high school, and obtaining gainful employment in the company. Document samples will have to be purposeful and support the criteria by being related to the unique experience of the student's success.

In a case study, once the sample criteria have been established, the most common research methods to explore them are observations, interviews and documentary analysis (Somekh & Lewin, 2011). This research focuses on all three research methods. Observation is a method frequently used in case studies that provides a first-hand account of what takes place in the setting where the phenomena in the case naturally occur (Merriam & Tisdell, 2016). Somekh and Lewin (2011) warn about potential barriers to access of the desired site. For this research, three advanced manufacturing companies in the Piedmont region of North Carolina have been vetted in advance and have agreed to allow a research study to be done

using their apprenticeship programs. The local school districts who worked to recruit apprentices for the industry were contacted and agreed to participate in the study. Observations of the general workings of the industry and the interactions of management and the participating apprentice in his work role are also part of the data collection process. Merriam and Tisdell (2016) explain that what is learned through careful observation helps the researcher make sense of the phenomenon, but it must be systematic, pertinent to the research question and subject to checks and balances. They further assert that to differentiate observation and research method from common, every day observation the observer must be skilled in attending to what others do not see, writing descriptively, knowing how to separate detail from trivia and using methods to triangulate the data.

Role of the Researcher

In accordance with Creswell (2007), the researcher is a key instrument in the research process. Qualitative information sources like interviews, questionnaires, observations and surveys are managed by the researcher who acts as an intermediary between the data and the consumer. It is important, therefore, that the consumer knows the relevant aspects of the researcher related to biases, experiences and expectations that they may bring to the research. In this research study, the researcher is a part of the state apprenticeship team and holds a statewide youth coordinator position. The researcher's background in CTE programs leaves her with an array of experiences in working with apprentices and apprenticeship programs. To reflect upon how prior knowledge and experience may impact the researcher’s ability to perform the research, she will keep a research journal of personal reflections and insights about self and the past that evolve from research environment.

A researcher using the case study methodology must know how to collect and analyze a variety of data sources or the essence of the case study will be lost (Yin, 2009). A goal of case study research is to improve quality by paying careful attention to validity and reliability within the study. This lies first within the abilities of the researcher. The inability of a researcher to appropriately handle multiple sources of data can decrease the validity of the study by improperly addressing a broader array of issues that emerge in the data or by failing to establish converging lines of inquiry. Organizing and documenting collected data is central to the reliability of a successful case study. The researcher in this study will use a database to ensure that information was stored for analysis and reliability checks.

To further ensure data is collected with fidelity and insight, the researcher in this study operated as a participant observer. Central to case study methodology, Yin (2009) finds that the role of participant observer in the field gives strength to the case through insight into interpersonal behaviors and motives. Participant observation always takes place in community settings, in locations believed to have some relevance to the research questions. The method is distinctive because the researcher approaches participants in their environment rather than having the participants come to the researcher. In this case, the researcher sought to learn what life is like for an apprentice while remaining, inevitably, an "outsider." While in the industry settings, careful, objective notes about what was seen was recorded as field notes. Informal conversation and interaction with participants in the study are also important components of the method and were recorded in the field notes by the researcher.

Ethical Issues

The position of this research is to find successful practices that can inform the best practice of work-based learning programs like apprenticeships that can recruit and retain

students from marginalized populations, like Black males. Though it is not the intent of the researcher, negative or counter-productive activities could have been uncovered in the course of the work. Such information was not used to embarrass or point out the flaws in a company's program. The researcher used the data to determine what supports helped the participant to overcome such barriers and focused on solutions, not problems. Issues of safety or violations of apprenticeship standards could have been observed during the research process, but were not. The researcher upheld her role as an investigator (though she is part of the state's accrediting agency for apprenticeship) and did not look for systemic problems in the company's training program. A statement regarding the role of the researcher was included in a disclosure statement as part of the IRB process.

Data Collection

An aim of a good case study is to present an in-depth understanding of the problem through extensive data collection. A prevailing characteristic is that multiple methods of collection are used to make the case. This is the most characteristic feature of the design (Creswell, 2007). Interviews, observations and document reviews are types of data in a case study used to provide a framework for understanding the issues. In this research design, the case study involved a multiple unit analysis to obtain data about the apprenticeship experience from several different points of reference including the support personnel working with the apprentice in their high school CTE program and the company's mentors and representative who maintain the apprenticeship program (Creswell, 2007). In the interview process it was important not only to interview the student about his experience, but also the people who interacted with the him from the high school and the industry. Likewise, documentation related to the apprenticeship including marketing materials, work-based

learning requirements, work process sheets, and observations enhanced an understanding of the experience of the student. Somekh and Lewin (2011) assert that the ability to take multiple methods and data sources to interrogate the problem is the strength of the case study. Themes and issues that emerge from analyzing the data sources help the researcher draw conclusions and make meaning of the study. Yin (2009) contends that case study requires an inquiring mind during data collection, not just before or after. Asking questions throughout a case study leads to the immediate need to search for further evidence as relevant information is uncovered throughout the process. Yin (2009) refers to using these multiple sources of evidence to corroborate a phenomenon as triangulation of the data, which can improve the validity of the data.

For each of the programs selected, the data samples collected showed multiple perspectives (a holistic analysis) of the WBL experiences at each site (Creswell, 2007). The perceptions of the students, the career development coordinators, and supervising industry partners obtained through semi-structured interviews were recorded. The impetus for the semi-structured approach was to cover the content of the research questions, but also allow interviewees to expand into other areas of personal significance. Questions were open-ended and referred back to the purpose of the study. An interview protocol guide was created before the interview process to ensure the validity and usefulness of the questions. An analysis of the following artifacts and documents were used in the data collection process: participation criteria, enrollment procedures, and marketing materials.

Participants and Participant Selection

The student participants were identified as having a low socioeconomic background, Black, male, in high school when they were selected for apprenticeship, and residents in the

Piedmont region of North Carolina. The apprentices had each completed a registered pre-apprenticeship program and possessed or were eligible to possess a Journeyman's certificate by completing the program. Additionally, the participants were all gainfully employed by the company, working in a position directly related to their apprenticeship program. The companies selected were registered with ApprenticeshipNC, North Carolina's accreditation agency along with the USDOL for both pre-apprenticeship and apprenticeship programs. Each of the companies offered apprenticeship opportunities in high skill, high wage occupations. They also had a record of demonstrated success in supporting Black, male students through completion of the apprenticeship program based on their current employment at the company.

Sampling in a Collective Case Study

Three work-based learning programs (multiple sites) were selected for their success in retaining Black, male apprenticeship participants. Within each program, an employee who fit these criteria and who became gainfully employed as the result of a high school apprenticeship experience was selected by the coordinator or industry representative to participate in the study. The logic of repetition (the same methods and techniques) were applied to all three cases. This repetition was an anchor of this design model and allowed for comparison of each of the cases (Creswell, 2007).

Criterion and Purposeful Maximal Variation Sampling

Criterion sampling was used to select the participants in this study. They were chosen in advance based on three criteria: marginalization by race (Black), gender (male), and persistence (completion of the program). Maximal variation sampling technique was used with site selection. The sites were chosen because they offer work-based learning programs

and have Black, male apprenticeship completers, but were also selected because they each developed their own programs. This increased the likelihood of obtaining different perspectives on persistence that can be reflected in the data (Creswell, 2007).

Interview Protocol

In this method, the participant and researcher engaged in a "conversation with purpose" in which the questions were focused on the research study (Merriam & Tisdell, 2016, p.108). Creswell (2007) discusses the challenge of the questioning process and the possibility that phrasing can lead to subtle persuasive responses or explanations, suggesting questions should be determined before the interview. The continuum of types can range from highly structured to open-ended or conversational (Merriam & Tisdell, 2016). This research utilized an unstructured interview process to allow the participant to express his understanding and perspective of the apprenticeship experience. The questions were open-ended, flexible and exploratory. Using an open-ended technique with the participants helped determine the type and content of the questions to be used when interviewing other stakeholders. Merriam and Tisdell (2016) stress that the unstructured style is rarely the only interview type used in a case study, but that typically all interviewees do answer the same open-ended prompts and questions to provide some standardization for data analysis. Good open-ended questions were used to yield descriptive data that was evaluated to uncover the themes and the meaning of the experience. The approach to studying the experiences of Black male students who completed an apprenticeship program begins with the identification of the type of case. In this study, an intrinsic case study was performed with Black, male apprentices who gained access through a high school program pre-apprenticeship program, completed an apprenticeship, and became employed by the sponsoring company. The intent

of the case study is to capture and understand the lived experiences of Black, male students who complete an apprenticeship program despite the challenges they faced as part of a marginalized group. These case studies occurred after the students completed their apprenticeship program and had received a Journeyman's certificate from the U.S. Department of Labor. A truer understanding of the transformation that occurred as a result of the experience is most evident to the student when the program is complete. Additionally, to capture the apprentices' understanding of factors that supported their persistence, the impact on their economic mobility and their change in mindset upon completion required an ex-post facto view of the process.

IRB Procedures

To ensure that participants were agreeable to the process and wanted to participate they were given a narrative and participated in a phone call to help them better understand the purpose of the study. An explanation of the purpose, as well as the research procedure (treatment), potential benefits and risks were provided to participants in writing through an informed consent. Participants were informed that they may withdraw at any time from the study. Participants were debriefed one week after the interview process to ensure that there were no harmful effects. Participants also received the researcher's contact information to receive the analysis of the study. Data collected by audio and was stored securely until the interviews were transcribed. Audio recordings were then destroyed. Because this study included the use of human subjects, it was presented to the IRB for approval before research began.

Data Coding

The analytic phase of data for this case study followed the approach referenced by Creswell (2007) and Yin (2009). This approach which included a description, analysis, and interpretation of the culture-sharing was used to form themes that related back to the literature. Several holistic readings of the research were performed to document and organize the data into a database. It was broken into parts for major organizing ideas. After initial categories were formed, they were described, classified, and interpreted using codes to develop themes in the research. In accordance with Creswell (2007), this is the heart of qualitative inquiry. A detailed description of what was seen within the context of the WBL setting and personal experiences of the participants determined the coding process for selecting what data would stay and what would go. These codes became the themes of the study. Themes are the common ideas that emerged from the research. Data was also reviewed for silences (what is not said), contradictions, deviations, meaning and bias leading to an interpretation of the data.

Data Analysis

The data were presented through a detailed description of the experiences of the three participants including people with whom they interacted and the apprenticeship settings. A chronology of the student experience from recruitment to completion of the apprenticeship was analyzed to determine data at each step. Patterns were documented to show the correspondence between categories in a cross-case synthesis. A word table as referenced in the work of Yin (2009) was used to display data from each of the three cases to create a framework of similarities and differences (Creswell, 2007). Actual analysis of the data requires that the data collected be a direct reflection of the initial proposition of the research

(Yin, 2009). Linking the data to propositions in this research was done through cross-case synthesis, pattern matching and explanation building. Cross-case synthesis applied specifically to the analysis of multiple cases implementing the use of a complementary word table by displaying features of cases that may share similar characteristics (Yin, 2009). Pattern matching was applied to both the independent and dependent variables across cases to increase internal validity by matching them to a set of predicted outcomes or propositions. This led to a technique called "explanation building." To explain a phenomenon is to stipulate a presumed set of causal links about how something has happened. These critical insights led to recommendations for further actions for working with Black males in apprenticeship programs.

Trustworthiness

Typically, a case study has two types of documentation-- the database and the report of the researcher (Yin, 2009). Best practice requires that a case study develop a database of evidence that goes beyond the researcher's report so that readers may access the raw data if necessary. A database was established in this study to categorize and store the information collected from each case. The ability of other researchers to look beyond the written report into the database of evidence increases reliability of the entire case study. Reliability is also improved in a case study by maintaining a chain of evidence (Yin, 2009). A chain of evidence helps the reader follow the work from the initial research question to the conclusion and back. All original evidence in this case study was maintained carefully and equitably and was not omitted due to bias. Careful handling and use of multiple sources of evidence increased construct validity in this case study (Yin, 2009). To maximize trustworthiness, participants in the study had the right to privacy and confidentiality. The names of schools,

participants and industries who discussed the apprenticeship experience were not disclosed in the findings. The identities of each was disguised or hidden using pseudonyms.

Chapter IV: Presentation of the Data

Chapter Four will begin with an introduction to the study that includes the methods used in the research followed by an in-depth description of the participants and apprenticeship programs in which they participated. It will conclude with a presentation of the qualitative data and results from the research.

Introduction

This multi-case study focuses on the lived experiences of three Black, male youth from North Carolina who entered an apprenticeship program during high school. The study was conducted with three apprentices from work-based learning programs at three advanced manufacturing companies. The lived experiences of the apprentices from program recruitment to apprenticeship placement and completion were studied. The apprentices were middle academic students, similar to the other apprentices in their cohort in academic ability and skill obtainment. Statistically, they were not an exception, but were representative of the population that was selected, except for race. The researcher, a white female, interviewed each Black, male apprentice using a semi-structured interview process. After building rapport through multiple phone conversations and explaining the purpose of the study, the apprentices were open about their feelings and experience, but seemed careful not to be offensive when describing relationships with their older white mentors on the shop floor. None of the apprentices mentioned their race or discrimination as a barrier for them in the workplace stating that they felt accepted by other employees. Instead, all three of the apprentices focused on age gaps and generational differences in the workplace and their desire to establish themselves as an asset and contributor to the company.

In addition to each apprentice, a high school career development coordinator and an industry representative were interviewed. The apprenticeship programs in this study all recruited from high schools with large populations of minority and low-socioeconomic students. Their recruitment efforts were aimed at students with a median grade point average of 2.5 to 3.2. The companies were seeking apprenticeship candidates with enough academic skill to survive the community college coursework, but who needed more to engage them than just their studies. Because all of the companies in the study are international entities, they each have a uniquely diverse workforce where all hourly workers have the potential to move up in the company. The companies are each diverse in race, religion and gender with employees from across the globe working at all levels of the company.

Artifacts including recruitment materials, program requirements, and observation notes for school and industry tours were used to support the themes that emerged from each apprentice's account of his experience. The flyers, pamphlets, websites, and posters used for marketing were developed by the companies in partnership with the local schools in each case. Pictorial representations of apprentices in posters hanging on the walls of the school, on printed materials and on apprenticeship website pages showed diversity in race and gender along with in-depth career information and labor market statistics. Observation notes from tours of the schools and the industries included a focus on diversity, career awareness and labor market data.

Chapter Four presents the findings of the data collected in this qualitative, multi-case research study. To follow the work from the initial research question to the conclusion and back, the following research questions are answered using a summary of the participants' responses. The primary research question in the study is:

1) What are the lived experiences of Black males who were successful in completing a registered apprenticeship program?

The following questions drove the research toward specific detail about the circumstances that supported the recruitment and completion of Black, male students and the relationship between school and industry personnel to the process.

2) What are the structures and characteristics of the program in which the marginalized student participated?
3) What roles did adults play (i.e., career development coordinators, school counselors, instructors, school leaders, community mentors, industry mentors, parents/guardians) in the process?
4) What did the Black, male student who completed an apprenticeship attribute to his success/ability to complete?
5) What barriers, if any, did the Black, male student face and how were they overcome?

The participants, the sponsoring industries and the support personnel at both the company and high school are identified with numerical designations to maintain confidentiality. They are also given pseudonyms within the text to preserve anonymity (Yin, 2009). Apprentice 1 will correspond with Industry 1, Industry Representative (IR) 1 and Career Development Coordinator (CDC) 1, and so on. The apprentice is the subject of each site in the multi-case study. The industry is the site at which the apprentice participated in the registered apprenticeship program. The IR is the support personnel at the industry who supervised the apprenticeship program and chose the participant for the apprenticeship. The CDC is the personnel position at the high school where the student was recruited for the apprenticeship experience. This study will focus on the lived experiences of the three

apprentices and detail the themes that emerged related to the successful completion of the program of the participants.

Individual Descriptions

In accordance with Yin (2009), description data about the participants is given to provide background and context for each of the three cases. Individual descriptions gleaned from the semi-structured interviews of the participants in each case will be included: the apprentice, the CDC from the high school and the representative interacting with the apprentice during recruitment and placement. Interview information along with data collected from observation, program information and marketing materials will be used to describe each high school and company.

Textural Descriptions

The themes of the research that emerge are an explication of data gathered from interviews with apprentices and the individual people who interacted with them. Moustakas (1994) states that individual textural descriptions are an integration, descriptively, of the invariant constituents and themes of each research participant. These themes that emerge from the textural descriptions of the lived experiences of apprentices will be accompanied by supporting textural descriptions made in the interviews with each apprentice's CDC and industry representative to triangulate the data and further strengthen and support the themes.

Apprentice 1 (Phineas): Individual Description

Apprentice 1, Phineas, is a Black male apprentice who was recruited for a high school pre-apprenticeship during his junior year of high school. He became a registered apprentice his senior year at an advanced manufacturing company as a process technician. Raised in a one-parent household by his mother, he came from an economically disadvantaged

background and has never known his father. By all accounts, the males in his family have been stuck in a cycle of poverty and Phineas' mom was eager to find better options for her son. Phineas was considering four-year college participation as part of his post-secondary plan because he wanted to play baseball and because his friends were also considering that path. The CDC at his high school describes him as a solid, but average student with strong math skills. Phineas, who sees himself as mature for his age, said he also thought he was a "pretty good student" and said he was close to a 3.4 grade point average upon high school graduation. He felt he could be successful in college, but was unsure about how he would pay for it. Due to his interest in math and a series of career awareness activities he participated in at his high school, he knew that he was interested in engineering. He attended a high school in an urban area of the Central Piedmont Region of North Carolina with a large population of high needs students. Several programmatic interventions were put in place at the school to increase retention and academic rigor and provide students with 21st-century skills including International Baccalaureate/Advanced Placement and College Tech Prep career pathways. Students at the school participate in these programs at a rate of 8% and 11%, respectively. The school performed near the state and local averages on standardized testing for students in the Black and economically disadvantaged subgroups. Like Phineas, the majority of low-wealth Black students at the school performed well academically with 58.5% of Black students and 61.9% of economically disadvantaged students scoring at or above grade level. Larger than the typical high school in North Carolina, with nearly 1300 students, the school sees about 36 acts of violence or crime on campus per year which is above the state's average of 2 acts per 100 students per year. With a daily attendance rate of 95%, the school states as

its mission to develop specific goals and high academic standards, using communication and commitment within a shared learning environment.

Phineas did not initially respond to advertisements and marketing campaigns aimed at recruiting participants from his school. It wasn't until he mentioned the opportunity to his mother, after the second round of industry-led promotions, that he began to seriously consider pursuing the opportunity. His initial thought that he would prefer to attend a four-year college to play baseball continued to be fueled by discussion among his friends. But it was his mother and his aunt who saw the value in the apprenticeship opportunity that drove him to contact the CDC at his high school to start the application process. Phineas went through a rigorous recruitment period throughout his junior year. He attended interest meetings at his school led by the industries hiring apprentices. These companies are members of an industry-led consortium looking for apprentices to fill their labor shortages with middle academic students who have the potential to do well in the classroom, but who also have good hands-on skills. Phineas attended required open house tours before submitting his application and transcripts. He, along with other selected applicants, were invited to attend an orientation where they went through a week-long interview process displaying their ability to complete hands-on projects and taking various assessments. Phineas was notified that he had been selected as a pre-apprentice for the following summer and would be working for the company for six weeks while taking community college coursework. After the six-week summer experience, Phineas was informed that he had been selected by Industry 1, Illumination Plastics Company, to be a registered apprentice. He understood that he would be paid for both his time at work and his seat time at the community college and that his associate's degree would be paid amounting to a scholarship of over $125,000. He attended a

signing ceremony where his accomplishments were celebrated with local partners including school system personnel, industry partners, community college leadership and community leaders. Phineas began as a registered apprentice during his senior year in high school. He followed a schedule of high school classes, community college coursework and on-the-job learning that was developed collaboratively by the high school, industry and community college. He continued his apprenticeship after high school and became a full-time employee and community college student.

CDC 1 (Mrs. Dee):

Mrs. Dee is the primary point of contact for the companies in the consortium to help recruit and support potential pre-apprentices and apprentices that attend the high school. She distributes marketing materials across the campus and helps to organize industry recruitment visits and application completion for apprenticeship. Mrs. Dee is very dedicated to ensuring that students hear, know and understand the apprenticeship opportunity. She has arranged for extra field trips to local company sponsors to boost interest, she has worked one-on-one with students to complete the necessary application requirements, and she has even been known to transport students to important apprenticeship events, even stopping to buy a meal to ensure they were fed. Mrs. Dee works with students on their career pathway and does a lot of preliminary work at the beginning of high school to make them aware of their talents and how those align with future education and career opportunities. Mrs. Dee worked very closely with Phineas during high school to ensure that he was educated about the opportunities in the apprenticeship and to complete the application process. Mrs. Dee is known as a resource to the local companies who host apprentices and serves as a partner and resource to them.

Industry 1 (Illumination Plastics Company):

Illumination Plastics Company, located in the Piedmont Region of North Carolina, is a custom plastics injection molding company that began its operations in the late 1980's. Illumination has 180,000 square feet of manufacturing and office space spanning two facilities, and 160 employees serving customers around the world. The company has embraced new technology and new equipment as needed to meet the demand of its growing customer base. Management has been progressive in its approach to do what is necessary to position the company as a leader in the plastics industry. The company has a very diverse population with employees of various nationalities and backgrounds. The shop floor was described as the "United Nations" with nearly 15 nationalities including people from Europe, South America, Africa, and France. According to the company there are a lot of people that look like Phineas working in the building. Phineas said he felt very included and welcomed at the company and has not experienced unfair treatment due to his race. Initially, Illumination targeted one position for its apprenticeship program, which was process technician. The lack of a pipeline into this position has inhibited the company's ability to expand. The youth apprenticeship program was one means to fill the pipeline with talent.

Illumination Plastics is a founding member of a youth apprenticeship consortium that started out with eight local manufacturing companies, all trying to fill the shortage of process technicians in their local area. The companies worked together to create the model they would use to recruit and screen high school youth for pre-apprenticeship to apprenticeship positions in each company. They also used a local non-profit organization as a fiduciary partner to manage funds that each company agreed to pay as a member of the consortium. The funds would be used to promote apprenticeship and for ancillary costs that may arise like

books or fees. The consortium agreed on issues like the title of the apprenticeable occupation, a progressive wage scale and the coursework for the related education at the community college. They also agreed that they would pay for the tuition for each apprentice at the local community college. Illumination plastics partnered with other consortium members on recruitment visits at the high school, where apprenticeship opportunities through the consortium, not individual companies, were highlighted. They provided open-house tours for students and parents/guardians and agreed to keep a close record of attendance as this would be a required component of consideration for the program. The company collaborated on other admittance requirements into the program like attendance, behavior, grades and participation in a week-long orientation where applicants would be screened through college placement testing and hands-on projects. Phineas was similar to the other applicants who were also selected based on the application criteria to attend the orientation. It is at this orientation where Illumination began to see first-hand the skill-level of the high school students and become familiar with the talent that would fit their company. After orientation, the company invited those who had the skill sets they were recruiting for to a six-week pre-apprenticeship experience. The consortium agreed beforehand that the applicants would also be given the opportunity to select their top companies for the pre-apprenticeship to ensure the right fit. In the case of Illumination Plastics and Phineas, there was a match. Phineas, along with other applicants, was invited to a pre-apprenticeship opportunity at the company.

Industry Representative 1 (Tim):

Phineas was merely 16 years old when he first encountered industry representatives from Illumination Plastics during his junior year of high school. Tim is a senior administrator at the company and is the first person apprenticeship candidates encounter during

recruitment. He is a leader in the local industry consortium who works to support current members and recruit new ones into sponsoring registered apprenticeships. Tim organizes student recruitment events with other participating companies and the high school, develops on-the-job learning experiences for pre-apprentices and apprentices, and arranges their related education. He is a source of support for the pre-apprentices and apprentices hired by Illumination. Tim talked to Phineas almost daily to check in on college coursework or to offer support. During the initial phases of the process, he worked closely with Mrs. Dee from the high school and the community college to ensure that Phineas and the other apprentices had the resources they needed to be successful.

Apprentice 1: Individual Textural Description

Phineas described his recruitment and participation as a youth apprentice as a pathway to opportunity. The experience was not chance, but a series of informed decisions he made that were supported and facilitated by the adults around him. The CDC at his high school described career awareness assessments that Phineas was exposed to that linked his interests and abilities to a career cluster. Phineas recalls the career development exercises he participated in when he explains the following:

> It was my junior year of high school, and the school gave us a paper just asking the different type of jobs we would like to do, asking about hands-on jobs and stuff like that. And I believe it was done by Mrs. Dee.

Industry 1 also provided career awareness information through recruitment visits, open houses and orientation. Phineas recalled how these intensive career awareness activities impacted him as a young adult:

> I know a lot of things. I know a lot of things that I would not have known being a teenager just going through school and not being able to actually see what goes on in the workforce.

Phineas was able to describe and identify specific people who influenced his decision to choose an alternative post-secondary pathway like apprenticeship. He credits much of his success in completing the program to the support and guidance from these people. His mother was the initial catalyst in hooking Phineas on the idea of choosing apprenticeship as a way to pay for a college degree while earning a salary. But she would also provide support in other ways like transportation to work and the community college. Tim said that throughout the recruitment phase at Illumination Plastics, Phineas had his mother and aunt with him. He noted that they were both very active in asking a lot of questions about the program. His mother was required to attend an open house, Mrs. Dee recalled, and both she and his aunt were in support of him choosing this path. Phineas explained:

> Because a lot of my family really did not push to do a lot of positive things, when my mom and my aunt seen, hey, he really wants to do something--they did all they could to help me…open houses, driving me for orientation, 'cause I didn't have a license yet. So, you know, they were my taxi drivers.
>
> They heard about internships, and a lot of people get those mixed together. So yeah, they knew what an internship was, but when they seen this they were like, "That's a lot bigger, and obviously a whole lot more, so give it a shot."
>
> My biggest barrier was just transportation. 'Cause I didn't have my own car, I had no money to buy my own car, so I just needed to make sure I had a ride.

> My aunt actually moved back home from Ohio to help me out with the apprenticeship.

Tim was also aware of the commitment Phineas' family had made to his success:

> He understood that from ... instilled, from his parent, that he knew they didn't have a lot of means for secondary education, but that they expected him to further his education, and they were gonna figure out some way to do that. And I think Phineas just…saw the opportunity.
>
> Well, he's got a mother and an aunt that carted him all over the county ... I think that's part of what we're looking for when we bring the parents in.... Some can drive when they start the program, but most can't, and the parents have to ensure that they get them to the right place at the right time. You've got class here, and you're working, and so that whole logistical piece is important.

Mrs. Dee acknowledged the family support structure that made the apprenticeship possible for Phineas:

> He would just talk about how mom, or I believe it was an aunt also, would help get him to work every day because that was a drive. Even though it's not that far down the road, if you don't live here, it's a good 15-minute drive from here, so someone had to be committed to pick him up every day, get him to work, pick him back up from work, get him to school, and I'm talking community college school, not just high school. There was a huge commitment on their part to make this happen with the transportation piece of it.

Mrs. Dee, his high school Career Development Coordinator, was also influential in supporting Phineas' success. Beyond the career awareness activities and recruitment

strategies Mrs. Dee employed, she took a genuine interest in providing Phineas with the tools he needed to not only enter the program but complete it. Phineas admits that he procrastinated in the beginning and that he was behind in the applications. Mrs. Dee recalls:

> He just came up to me out of the blue. Apparently, his teacher maybe didn't follow up with him, and he said, "I need to know how to apply for this."

The two worked closely to obtain all of the necessary forms and documents for Phineas to submit them on time which supported his entry into this pathway, but that was just the beginning. As Phineas grew in his apprenticeship role, Mrs. Dee's presence as mentor and confidant also grew. Mrs. Dee made a personal commitment to the success of apprentices at her school, including Phineas. She used her personal time and resources to fill in the gaps for transportation and even food. Though Phineas is now working in the adult world, they still stay in touch and have formed a collegial relationship. She recalls:

> I would love to say that we did something special or unique. I can't say that we did more than presented the opportunity, and I just followed up with him.
>
> I watched him grow, and this is what I've always told him. I said, "I watched you grow from being just a little high school student into a young man." When he comes here, and he was helping with our career days and stuff, he was the company man. He had the shirt on with the emblem, and he just became a young professional within his senior year, and you could just see it. The way he carried himself in the halls, the way he did things, he was growing up, and he was so much farther ahead than other seniors.

> We were talking about his cousin, and I'm like, "How is it possible that you guys were raised so close together and you ...?" He was like, "I don't know. I don't know. It's just a different path."
>
> You really get to know these kids. After an event he attended for his apprenticeship recruitment I told him, "I'm going to take you to lunch before I take you to work. I'm going to make sure you get lunch." I took him to a Burger Bar, which is a really big restaurant here. I don't think he'd ever been anywhere like that. He took a picture of this giant burger that came out. He was just smiling and just having so much fun. We just sat, and we talked. It just warmed my heart.
>
> My interaction with Phineas now, if something comes up here where I need somebody to come talk to students, I may go through him, shoot him a quick text and say, "Hey, I need this. Do you think you can make it happen? Will you ask your boss?" and things of that nature. He's a great point of contact. He would always be willing to talk to any kids that have questions. He's like, "Whatever you need, Mrs. Dee, whatever you need. Just let me know. Whatever you need. I'm there. I'm there. I'm there." He's a text away.

Tim described Mrs. Dee's role with Phineas from his perspective as an industry partner:

> I think it was a key role in that the CDC at the particular high school that this youth apprentice came from was very engaged, involved, committed. Was willing to even take some of the young adults to orientation and pre-apprenticeship with her own car, on her own time, to help get them there. So, I think that's definitely key. And the first two years of the program, we had more apprentices from that high school than any other high school in the county.

Industry support in the form of financial compensation and on-site mentorship was identified by Phineas as another catalyst in the apprenticeship journey. Phineas felt accepted by his new co-workers and sees himself as an investment of the company. Upfront, the company worked to create a welcoming environment. Mrs. Dee described the signing ceremony held by the company for the new apprentices:

> Just like they do for athletes and other things of that nature, they'll [the apprentices] get some swag, they'll read a bio about them, bring them up, parents are crying in the audience because they just saved thousands of dollars on education, and they're proud of their kids. He's part of their future. They're growing him and developing him, and they've made a huge commitment. It's about $125,000 commitment to him as a young person to do this, so they're hoping to make him part of their company on a long-term basis.

Phineas perceived his new role at the company to be a positive one:

> At first, I was nervous, but working here ... You realize these people here are just gonna be honest with you. They're gonna be honest with you. So, I get in, and I'm really nervous. They're like, "You gotta cut that out. Come in here working with these machines nervous, you're gonna get hurt." So, you know, I just loosened up, and they made everything a lot easier for me.
>
> With me, I feel they accepted me. Because I came in and I was already mature, and they seen that I like to work. A lot of people say, "Oh, today's youth," when I mess up. So, you know, they'll joke around with me about that, ... But they see, they realize that I really like working. And if you tell me what to do, I'll do it, and I'm gonna do it to the best of my ability.

Phineas identified that being a high school student, a college student and an employee is a daunting task. Tim, the industry representative working with apprentices, described his approach to creating support and balance for the apprentices:

> When they're still in high school, they have things that they have to do, and we always, of course, make that time available to them. Somebody provides as their mentor. And every day during the apprenticeship program I saw Phineas. I want to know about school, grades, issues, what I can do to help him. I took time out of my day, every day, to do that. And if there was any barriers in place we try to remove that. So, I think that's key that you got to know that we are looking at their grades, their attendance, and we're asking them about it. We pay them to be there. That tells you the importance in place on the education piece, which that's one of the things that's key to youth apprenticeship model working, is that everyone's placing value on education.

Phineas talked about the positive impact on his apprenticeship experience having a person at the company who cared about him and who became a resource:

> I go to Tim. He's been my backbone for work and school. I'm not doing so well in one of my classes, Tim gets wind of that, he calls me, "Phineas, what can we do here to help you? Make sure you're staying on top of things." While I'm in class ... It was every day, when I wasn't as busy, I'd come by and me and Tim would talk every day. He's a busy man with being the Vice President of the company, so he's very busy, but he always made time to talk to me and make sure I was on top of everything. So now it's maybe once a week or once every other week that me and Tim, we get together,

> we talk, make sure we're on top of everything. So yeah, he's been my backbone when it comes to the apprenticeship.

Phineas also found support from an unexpected source, the other students participating in the recruitment process. Because Illumination Plastics is part of a consortium, they recruit from a large pool of students and invite multiple candidates to participate as a cohort in a pre-apprenticeship. Although the pre-apprentices are competing with each other for the few apprenticeship slots that will be offered, there is a sense of comradery and they help each other through. Phineas explained:

> So, yeah. In the pre-apprenticeship, we do everything together except for work. Whatever guys that are at your company, you work with them. But school-wise, all the apprentices are there together.
>
> Yeah. I gained a lot of new friends in that six weeks. It wasn't just work and school, it was actually really fun. That's what I tell people when I go and talk to the schools. I say, "Try it. You know, these six weeks are gonna be pretty fun. You're earning money. You have a summer job. You're earning college credits, and you learn a lot of new things, and are meeting a lot of new people, so just try it."

Tim describes how the consortium's cohorts are designed to create an environment of support and collaboration both among the participants and the participating companies:

> We let applicants pick their top 10 companies they'd like to go work for. And we sit down as a consortium and we have a draft day, where we go through. These people have made it through orientation, they show interest here, do the employers have interest in going to the next step, which is pre-apprenticeship? So, we have a draft

> day. We try to make sure the kids get their top two choices of assignment to that company, and we've been pretty successful with that.
>
> And then that's when they start the pre-apprenticeship program, which is really a six-week job interview for over the summer, where they'll take two college classes and then they'll work at the company the other days of the week full-time. That's really ... It's a two-way job interview. They're interviewing us while we're interviewing them, because we got to make sure that it's a fit for both. Even though they are all interviewing for the same position, we see the pre-apprentices interact with their cohort to complete a project here. They go to class and help each other with the curriculum. They all get to know each other very well and we get to know them too.
>
> We really only had really two rules for our consortium. One, is put the student first and try to make every decision so the student comes out on top, that generally leads to the right decision. And secondly, we have to make sure that all the employers in the consortium are successful, so that it helps breed success of the program. So, we'll make decisions, and people will give up applicants to make sure somebody else's company is successful, so that we all can move. And I think that's why we've seen the success that we have.

Phineas described his recruitment experience through the consortium's cohort model as a source of stability for him. He not only was chosen by Illumination Plastics as an apprentice, but formed relationships with the other companies who were interested in recruiting him. Because the newly selected apprentices sign together at a ceremony and attend the same classes together at the community college for their associate's degrees, they feel a sense of

belonging within the industry. They become ambassadors for not only their company but also for the consortium. Phineas described the impact the consortium had on him:

> The major impact is just having stability. Apprenticeship sets forth everything you would need to be successful. It does a lot ... Well, the consortium, it does a lot for me. Everything I needed, the consortium has provided for.

Tim described how the consortium starts its collaboration with the relationship with the CDC at the high school. The industry partners take the lead on promoting the program and do not leave it to the CDC to develop presentations or create marketing materials. The CDC becomes a partner, with the companies as the lead:

> We educate the CDCs at the high school so that they can speak to it before and after the presentations, and then we also send some promotional materials to the high schools to be displayed at football games, basketball games, in the counselor's office.

Mrs. Dee described how the collaboration within the consortium creates wrap-around services. Recruitment begins and ends with the apprentice. She detailed the following:

> The apprenticeship program is a partnership between the schools, the community college, and the consortium. The different companies, there's 27 of them now, so it's a collaborative exercise between all of us. We stay in constant contact, tweaking the program, providing them access to the students to do presentations, giving information to the students, so it's a lot of back and forth. It's not just a linear, one directional type of event, and it requires a lot of communication between them and us and the kids and the parents and all the parties that are involved. Phineas is a wonderful spokesperson for the consortium and for Illumination Plastics, so he wants to come back here any time he can to talk to kids, to share this opportunity because he

> sees it was such a wonderful experience and is a wonderful experience for him. I shouldn't talk past tense. Any time, he's like, “I want to talk to everybody. I'm telling you, I want to talk to everybody at this school.” His boss is great for letting him be there. They let him come, and they let him represent the company in a phenomenal way.

Though Phineas had multiple layers of support throughout his pre-apprenticeship-apprenticeship program, he has several personal qualities and attributes that he and those working with him say contributed to his success. By all accounts, his desire for a better opportunity in life coupled with his academic skills and work ethic made Phineas an excellent candidate for selection and completion of an apprenticeship. Phineas describes his view of the apprenticeship opportunity:

> The apprenticeship and the track that Tim has me on, it’s taking me down the same path that I initially wanted, so it’s building on and it’s gonna put me higher up once I do get there. Because before I found out about the apprenticeship I wanted to go to school for engineering, so this is really building for that, and hopefully, eventually, if everything goes well here, I’ll be an engineer here. So yeah, that’s my goal ... They’ve really been pushing me for that. It’s given me stability. With going off to four-year school, and my parents not making enough money to pay for it themselves, it’s helped out a whole lot. So yup. Apprenticeship has been ... All my school is paid for, it puts money in my pocket to help out.

Phineas describes himself as confident and willing to learn. He stated that he had good grades in high school, especially math, graduating with a 3.4 GPA. He took great pride in

completing the project in his orientation and displaying his ability to work with his hands. This led to his pre-apprenticeship opportunity. About being an apprentice, he said:

> Just being able to take on all the new things that's been thrown my way. They put me on the spot as much as they can just to see how I can hold the pressure. They tell me, "You're a man now Phineas."

Having offered him a coveted spot as an apprentice, Illumination Plastics and his mentor, Tim, described many qualities that made him a successful apprentice:

> He's more mature than his years suggest, I think that he understood the opportunity. And then he understood that he knew they didn't have a lot of means for secondary education, but that they expected him to further his education, and they were gonna figure out some way to do that. And I think Phineas just saw the opportunity. He saw it, understood, and they just marched forward and made it work. His motivation, his desire to succeed, kind of whatever it takes. If he fails, he's gonna keep coming back and not stop. I think that's the key thing. And the fact that he understood the relationship of what this meant, what the opportunity was. He truly saw it for the true opportunity it is. He's gonna most likely take this and turn it into a four-year degree at some point in the future. And, you know, he's gonna do it a different way than a lot of people, but for him I think it's gonna work out best. And part of that's because of what he's been exposed to. Just things like we're talking about today. The interviews, he's been through four or five interviews, two or three television interviews, and that in itself is a tremendous growth tool for a person. You know?... If you can express what you're thinking and feeling into words, then it makes life a lot easier.

> We saw Phineas ... I guess, sort of, come out of his shell. And he's kind of become somewhat of a social butterfly, and that's not what he was when he came to us.
>
> He's always been prompt and on time… When they're still in high school, they have things that they have to do, and we always, of course, make that time available to them. The quality that he had, was he actually was looking ahead and planning ahead, not coming in the day of or the day before and say, "Hey. I've got this thing at school and I need to be off." He was planning his time.
>
> Phineas saved up enough money. He's bought his own vehicle. Provides his own transportation.

Mrs. Dee, likewise, observed attitudes and qualities Phineas possessed that were conducive to his entrance into and completion of the program:

> Just from hearing him talk of other things, it's because he saw ... It is a way ... He's like, "I knew I wanted more education, but I didn't know how my family was going to be able to afford it." So, I think it was from the standpoint of it was a way to get more education. He went, and he saw that he could do it.
>
> He was a very bright young man. He was willing to work and figure out a way to make it happen because he saw what it could do for him, and he saw what it could do for his family. He just stuck with it. I don't know that's something we can teach, really. Some kids just have it within themselves, and he's one of them.

Apprentice 2 (Jerry): Individual Description

Apprentice 2, Jerry, is a Black, male apprentice who was recruited for a high school pre-apprenticeship during his junior year of high school. He became a registered apprentice his senior year at an advanced manufacturing company as a machinist. Raised by both

parents in the household, he came from an economically disadvantaged background and was surrounded by people in his community who were affiliated with gangs. The CDC at his high school describes him as an average student who enjoyed math and working hands-on with a natural aptitude for learning. He noted that Jerry had a rough start and that the pressure and influence of the gang mentality of his peer group nearly derailed his academic career. His original post-secondary plan was to join the coast guard. His high school was part of a large school district in the southern part of North Carolina's Piedmont Region. The comprehensive high school was divided into four smaller learning communities that create diversity and small school size. Jerry's high school is considered a school within a school. Jerry's smaller school had an engineering theme, one of four learning communities with robust career-themed academy programs aimed at building relevance and rigor into the academic program. Jerry's learning community, engineering, had around 500 students, a little more than half the size of most schools in the state. About 5% of students in the school take advanced placement courses, while 15% participate in Career and Technical Education Courses, which is at the state average. Only 5 acts of crime or violence were committed per school year in the learning community, falling well below both district and state averages. With a graduation rate of 93%, black students and economically disadvantaged students out performed their peers across both the district and state.

The school states as its mission to prepare their students for a challenging future in a technology based society. Also, they strive to create an outstanding center for teaching and learning that recognizes and nurtures the full potential of every child, provides tools for success in an increasingly integrated world, and develops self-directed, independent thinkers who are responsible citizens in school and within the broader community.

Jerry was initially skeptical of the presentation he heard about the apprenticeship opportunity. He did not believe that he would actually receive a free college education and wrote the opportunity off as a hoax. It would take two more contacts and direct conversations with representatives from the company before Jerry would be persuaded to share the information with his parents and agree to apply for the apprenticeship. He began the recruitment process in the middle of his senior year and became registered as an apprentice after high school graduation.

CDC 2 and 3 (Mr. Truly):

Mr. Truly works closely with students in the learning academies at his high school to ensure they have received accurate and decision-informing career information as it relates to careers within their chosen high school pathway. He is the catalyst for apprenticeship participation with the local companies who register apprentices from his school. He was instrumental in forming the partnership with the local company who recruited and hired Jerry. Mr. Truly was also the CDC who was integral in the recruitment and placement of Apprentice 3 who will be introduced in the next section. Mr. Truly centers his program on post-secondary statistics related to the type of education needed to fill high wage, high demand jobs. Mr. Truly worked very closely with Jerry during his high school career to ensure that he was connected to the opportunity.

Industry 2 (Landman Corporation):

Landman Corporation is the company where Jerry was chosen as a pre-apprentice and later earned an apprenticeship position. It is a global powerhouse focusing on the areas of electrification, automation and digitalization. It is one of the world's largest producers of energy-efficient, resource-saving technologies, and is a leading supplier of systems for power

generation and transmission, as well as, medical diagnosis. The company has approximately 351,000 employees in 190 countries and has reported worldwide revenue of $88.1 billion. Landman employs approximately 50,000 people throughout all 50 states and Puerto Rico. Their facility in North Carolina is located in the southern portion of the Piedmont Region. The decision to start a youth apprenticeship program came when the company had a major expansion and was not able to find enough qualified machinists. They joined an already established group of local industry partners that had formed in the early 1990's who were already working with high school youth in apprenticeship programs. The group had already established their recruitment criteria, process, and pay scale. Landman agreed to their terms and joined the consortium to recruit apprentices after a lot of convincing with the plant manager. The established recruitment process included industry visits to the high school, required industry tours, orientation, and an invitation for select candidates into a summer pre-apprenticeship program. This would then lead to an apprenticeship opportunity for some of the high school youth including enrollment in an associate's program at the community college paid for by the company. Both Jerry and Apprentice 3 would be part of these initial recruitment efforts by the Landman Corporation.

Industry Representative 2 (Rick):

Rick, a former adult apprentice himself, worked for Landman Corporation before being recruited to take on the role as the company's technical training director. In addition to his responsibilities at the company for technical training projects, Rick is responsible for the coordination of apprenticeship recruitment activities which include working with local educators like CDCs and counselors to understand the opportunity the company is offering.

He also helps to establish the recruitment process for his company with the consortium and is the person who ensures the safety and success of the apprentices.

Apprentice 2 Individual Textural Description:

As a high school student, Jerry was exposed to extensive career awareness opportunities that prepared him for entrance into an apprenticeship program. He recalls that his career development coordinator worked with the teachers in his learning academy to distribute information about apprenticeship opportunities. Mr. Truly expressed the following about how he worked with both Jerry and Apprentice 3 to attract their attention to the apprenticeship program:

> We want our kids to make good decisions about what kind of education and training that they choose to move on. And we share with them that the millennials are the most educated generation in the history of the United States. The highest ratio ever of Americans have gone on to college and got a four-year college degree. But the problem gets to be is that over 50% of those millennials, who have at least a four-year college degree, today they're unemployed or underemployed.
>
> So, we share real data with our kids. And try to help them to understand what are the variety of pathways.
>
> We share with them the other big data point, that 30% of the Americans who go to community college make more money than the ones who have at least a four-year college degree.
>
> It's not so much about how much education, it's about what kind. And then we start sharing the information and data with them.

> Everything we do is based on three things: career and industry awareness, career and industry exploration, and then moving into intentional skill building. They know they have an option.

Landman Corporation also provided career awareness through presentations they held at the high school about opportunities in an advanced manufacturing apprenticeship. Jerry explained what he understood about opportunities an apprenticeship in the industry would afford him:

> Most people my age just graduating college have all these student loans and this debt, not a nice vehicle, and two or three jobs not in their field for their degree at all. I liked the idea of having a degree that's fairly new, and I'm not gonna say skeptical, but it raises a lot of eyebrows, "You got a degree in electronics, that's different," instead of, "Oh, I got a degree in art or a degree in mathematics," because a lot of people do that.
>
> This opportunity was bigger than me and it's impacted me greatly. Learning about it opened my eyes to more career paths than what I thought I would be capable of. I know it would benefit my family if they need it.

Jerry's family had a favorable view of his participation in the program. When Jerry brought the information home from school and told his parents that he was not going to consider participation he describes their reaction:

> I came over with a sheet of paper, and I told them this, and I told them, "I'm not doing it because nothing is free" and all that. And they were like, "Well, consider it." And the preceding months until I got that phone call, they were like, "You gonna do it? You should do it?"

> And then they pushed me to keep continuing it and to give it a shot. And it's benefited me.

The apprenticeship opportunity created cohesiveness and bonding between Jerry and his parents. It was their persistence that drove him to seek the opportunity to rise above his current situation. He describes how their support of him improved the dynamics of their relationship and ultimately drove his success:

> My dad spent a little more time with me. He's a maintenance guy, very good with his hands and all the machining, building motors, installing this, electrical work. Pretty much everything I do out there, he knows how to do. So, this is a great father-son bonding moment.
>
> And my mom is like, "This is cool." She's gonna encourage it too, because of father-son bonding, spend more time with him, and I got a spark of interest. I can hang out with my dad? This is kinda cool. Maybe I can get paid to do this, maybe we can just hang out on weekends and we can do more stuff, that'd be great. I was just sold from there.
>
> My dad and my mom both say, "You're given a wooden spoon, it's up to you to make it a silver spoon at the end of your life." You're gonna eat with that wooden spoon for as long as you want, but if you want to make it to that silver spoon, you gotta do what you gotta do, and that's what I did. I want to have a better life than what my parents gave me. I want to give a better life to my kids when I have them than the one I had. Always improving no matter what, that was my biggest motivation and drive.

Mr. Truly and Rick both witnessed the support of Jerry's parents who attended the open house portion of the recruitment process. Rick explained that if the parents do not commit

and attend the event with the student, then they will not go forward in the process. He recalled that Jerry's parents knew the importance of the opportunity:

> I met his parents, because of the open houses and signing ceremony. So, the parents, sure, have to go on the tour too, and hear the pitch, right? And get the information and get the facts and data. And that's when I knew that ... I mean, he's got an African American dad and he's got a white mom. You know, the mom, kind of said to me, "Well, I told him if he doesn't want to do it, I'd do it." And I think the dad actually is kind of a technician of some nature. And I don't know where. But you know, he's in that kind of space too. He said he'd probably would love to work in a company like Landman. And seeing that opportunity, and being able to go well... "I never had that chance." Right? And all of sudden, "So you're gonna pay for my son's education and his training, and you're going to pay him an hourly wage when he sits in class? And pay his tuition and books, and this is the 50th largest company in the world? I would love to work here."
>
> He has a dad who was more technically minded. And a mom who looked at that, and who knew her kid. And really kind of encouraging him, saying, you know, you should really do this. I wish I could have done that. Who, after they understood it, kind of was really able to help encourage him.

Mr. Truly used his position as the CDC at the school to encourage Jerry also. Jerry remembers Mr. Truly telling him:

> "No, you're a bright star, you have all this potential," and I'm like, well, I kind of do.

Mr. Truly recalls specific conversations he had with Jerry also. It was common for Jerry to visit his office where they would talk about his progress throughout the process. One conversation happened as Joey was competing for his apprenticeship slot:

> ... I know you, you want a car, and some different stuff. And you've got kind of this [quality]--You're kind of tactile. And you've also got good math skills. You know. Based upon what I know about this, if you like it, it could be a really great path for you.

Landman Corporation credited the CDC with forming close bonds with the apprentices and being an integral part of their success. The company also had a support network that Jerry says made the difference in his participation. After Jerry declined to enter the program, Mr. Truly let the company in on some of the concerns. Jerry states that it was the follow-up from Landman Corporation about their upcoming open houses and orientation that got his attention:

> It was probably six to eight months later I got a phone call from them: "Hey, be here this time, this date, I'll see you there."

The company's philosophy of supporting apprentices was described by Rick:

> So, I can tell you what we typically do, as far as interacting with each and every one of them during the process. So, when we go out to the high schools, or the community colleges, or the veteran's groups, it's the same person all the time, and it's myself. I go to every recruiting event, every time ... I'm really the only one on the team that, actually at the site, that handles the apprenticeship. So, they see me all the time. They're going to interact with me first. I'm the one giving the presentations. If their parents have questions, they come to me. So, I'm interacting with them on a social level to start with. Once they get to the orientation process, I am observing them every day. I am also one

> of the individuals that helps them do the machine work; do the handwork. So, I'm much more closely integrating with them during that week.
>
> I'm also teaching the classes that they're going to take. The safety, the metrics, the measuring tools. I teach them about first and third angle projections and engineering drawings, and you know, all that kind of stuff. So, they're interacting with me on a very personal level throughout that week. Asking questions. You know again, I'm helping them with their handwork; helping them with their concepts. And then the pre-apprenticeship, there again I'm on the panel interview. I'm one of the members of the panel interview. So, I see them every day. We go out on the factory floor, and I interact with them and their mentor every day. Because the idea is that I'm the guy that's going to choose the apprentices, so if I'm not seeing what they do every day and monitoring them on a day-to-day basis, I'm not really doing myself any good. It's a very close interaction.
>
> Again, the selection process is nine months long. It's very intense, and I'm working with them every day. So, once they become a full-time apprentice, they have to maintain shop grades. So at least once a week, I'm out on the factory floor with their mentors just gauging where they are, what their level of engagement is, soft skills, all that kind of stuff. But I plan ... I try to spend about an hour to two hours on the factory floor with them every day.

Jerry spoke a lot about the support he received from the company through the completion of his apprenticeship:

> Once I got into the apprenticeship program, just having those mentors, because they're older, they've been through experiences. That's the great benefit of working with

people that are a lot older. You look through their mistakes, their experiences they've done, by just telling you. It just stays in your brain like, "Oh, I'm not going to try that, because it generally didn't work out for them."

So just them saying, "You're young, you're in something new, you have the mindset of trying and not giving up, which is good. But you let things get you down a little bit. Try to keep on going, because you can't learn everything in one day." The term of baby steps came into play, one step at a time. I'm like, that's what that means. And that just stuck with me, just having great support from the mentors out there.

My last mentor, actually, he believes males have short hair and no earrings, no tattoos. I have long hair, earrings, and tattoos. Me and him were the best of buds, just because he saw what was in me. I would obtain everything that he would give me. And I kinda changed the way he thought about people, just because of me. Which is amazing to say.

Rick definitely worked around our schedule. If we were supposed to go on the shop floor and we actually were like, "We have homework, we have stuff due," they'd be like, "Come over here and do it, and we'll give you laptops, and if you need help, it's there." We had an engineer here that would help us, which I benefited greatly, because I passed the class.

Rick made it clear that we're a big investment, so they want to make sure we know and obtain everything to be at that level when we graduate. So, they were all hands on deck, "You need this? Need that?" So that was great.

As part of a consortium, Landman, along with the other companies, developed cohorts of students. Jerry described that the cohort gave him the drive to out-compete his peers along

with the desire to collaborate to see the whole group succeed. He describes his relationships in the cohort:

> I had two friends that were in there. Naturally, you have friends who are like, "I'm gonna out-compete you." But it's like, "Alright, let's see who gets the farthest." All three of us graduated at our respective companies. And with the friendship.
>
> But far as other than that, it was just us apprentices helping each other. Because some had strengths, some had weaknesses. And we're like, "We're all in this together." Our motto here is, "Better Together." So, we would joke like, "Better together, man, we've got this."
>
> And some would struggle and some wouldn't. So, we kinda all just rally around each other. With all the support with all the apprentices, we banded together, and we got it all done.

Mr. Truly also observed the comradery among Jerry's cohort:

> At times, there have been problems with transportation where amongst the kids and everything. As a cohesive group, you know, this cohort helped each other out. They're doing it together. I think that helps a lot. I think for all those kids. You know. That it helps in that they're going through the same stuff. Right? And that ability to kind of share, I'm not out here on the island all by myself. And there are other kids. You know, people are helping me this way, and that way. Right? In that space. That, yeah, that support function. And a lot of those kids depend upon it.

Rick describes the support he sees in the cohort working together for success:

> One of the unique things about the program is, areas where some apprentices excel, other apprentices do not. But yet the apprentices that do not excel in those areas, excel

> in other areas…You know, so they interact with one another, and they're able to help one another. So, Jerry, any problems that he had in his coursework, we were able to engage other apprentices. Actually, he did it, personally-engaged other apprentices.
>
> They actually put together a study group. We gave them permission. We gave them two hours, I think every Thursday, to come together as a group. I got them a space where they could work, and then I kind of monitored what they were doing. I didn't want them in the room playing around. I needed to make sure they were actually studying, but he was engaged. He took the initiative to seek help on his own, and those are the qualities and characteristics that… makes a good apprentice.

Jerry's apprenticeship experience came full circle for him. He was asked to inform the company about the program and mentor other apprentices. He talks about becoming part of the apprenticeship process:

> Our input actually changed the way the apprenticeship is. Which is great, because a lot of the times, they have a way they want to do something, and that's the way they stick to it. Now, they want to learn, evolve, change, make the best of it they can. So, they talk to the people that actually go through it. Which is amazing, because you don't see that, that often.

Mr. Truly highlighted the uniqueness of Jerry's input into future programs:

> And those kids that are at Landmark and, all of our apprentices, they're gonna come back and talk to our kids. They become part of our overall awareness and exploration process. It shouldn't just be me. There's gotta be this whole component…
>
> And he's gonna share that story with them, "I know what you're feeling. I know what you've been told." Right? "And I can honestly tell you this was the best decision

> of my life. I've got my friends going to Duke, NC State, Carolina. I'm here making all this money, I'm buying a house, and I got a car." Right?

This was reiterated by Rick who said:

> …One of the first things that the apprentices do, yeah, they realize that they're driving a clunker, and they go out, and they get another car or something like that. And I utilize that, I wear that out. So, whenever they go to local schools and stuff like that, I have them drive their Ford F350 or their new Challenger or something like that, out to the school to show the kids.

Jerry, who describes himself as an artsy guy who loves to create, had personal qualities that led to his success as an apprentice. He expressed that he understood that learning is life-long and he has many opportunities on this path. Mr. Truly said that Jerry's math skills and ability to work with his hands were only a few of the many qualities that made him a candidate for the apprenticeship program. He also had good grades, and attendance and behavior were not an issue. Mr. Truly explained Jerry's introspective view:

> So, we're not trying to tell kids you should become an apprentice. Jerry understood the opportunity and this was a pathway. What we are telling them when you have this pathway of knowledge, these doors become open to you. Jerry understood that's transferable knowledge. That's transferable skills. And yes, this is a valid pathway of becoming an apprentice, right?

Rick stated that Jerry was a mature young man who took the initiative. He describes how Jerry recognized apprenticeship as an opportunity:

> I think that he saw the opportunity that was given to him and the gravity of the opportunity, and how it could raise him from a certain level of socio-economic status

> to another level of socio-economic status... I have only heard of his background and... My understanding was that he was an at-risk student in high school, and that joining the program and graduating from the program has really, has turned his life around and raised him to a whole new socio-economic status that he wouldn't have gotten otherwise. He brought one of his teachers to tears when she saw him working here. She thought he would end up in a gang.

Apprentice 3 (Mark): Individual Description

Apprentice 3, Mark, is a Black, male apprentice in the Southern Piedmont Region of North Carolina. He entered the apprenticeship recruitment phase with Industry 2, Landman Corporation, during his junior year of high school. This would be Landman's first cohort of apprentices. Mark, however, was not selected to be part of the first cohort at Landman. Mark would try again and become an apprentice the following year as a senior with Industry 3, Bond-Regis Industries. Mark was unsure what he was going to do after his pre-apprenticeship experience. A good math student, he knew that engineering was a pathway that interested him. He also knew that he had to find a way to help support himself and his family. He had average grades but was not sure it would be enough to get him into a four-year school.

Mark was raised in a foster family by an elderly mother where he was the oldest of five children. Mark stayed in contact with his biological father, who according to Mark, often relied on Mark's support. Mark attended the same high school as Apprentice 2 and also worked closely with Mr. Truly, the CDC, during high school. During Mark's enrollment in high school, the academic programs were standard Career and Technical Education programs. The school was a regular comprehensive high school and was not divided into

learning academies. Mr. Truly described the campus as "half rich, half poor," but a place where it was a priority to make sure all students had viable post-secondary options. Black students and students identified as economically disadvantaged performed higher than the state's average at 75.1% and 76.9% respectively. Acts of crime and violence were just about the state average at 3 per 100 students. The school's mission was to create 21st Century learners.

CDC 2 and 3 (Mr. Truly):

Mr. Truly has been a high school CDC for over a decade. By all accounts, he is dedicated to the success of his students and bringing them out of poverty through education and opportunity. Mr. Truly has a deep reach into the local business community that surrounds the high school. It was at a local business meeting that he would be seated with Industry Representative 3 who was interested in starting a pre-apprenticeship to apprenticeship program at her company. Mr. Truly was instrumental in program development and worked closely with IR 3 to recruit students as part of the first cohort. He also worked with Industry 3 to monitor Mark's progress even after he graduated from the high school.

Industry Representative 3 (Patsy):

Patsy worked in the human resources department at nearby Industry 2, Landman Industries. Once connected with the high school through Mr. Truly, she created tight bonds with the students being recruited for machinist positions at the company. It was not unusual for her to contact them directly by phone to engage them in recruitment opportunities. Patsy worked closely with Mr. Truly to recruit students, spending time on the high school campus and developing recruitment tools for the apprenticeship process. Patsy also reached out to a local apprenticeship consortium and positioned her company to join the group. Additionally,

she recruited and partnered with other industries in her area who were trying to attract the same type of talent. Her goal was to create a cohort that would warrant the creation of course schedules at the community college to accommodate the high school students in the apprenticeship program. It was Patsy who partnered with Industry 3, Bond-Regis Industries, to hire Mark on as an apprentice after he completed a pre-apprenticeship in her program at Landman Corporation.

Industry 3 (Bond-Regis Industries):

Bond-Regis is a multi-national company with sites across the southeastern United States and Europe. Bond-Regis supports mechanical and plant engineering efforts around the world with its cutting-edge technology and unique industry knowledge in machine manufacturing. They employ more than 29,500 associates to develop safe and resource-friendly solutions for machine manufacturers and end users. Their facility in the southern portion of North Carolina's Piedmont Region partners with local high school programs to attract apprentices as a member of a well-established apprenticeship consortium. The company was not part of the recruitment model followed by Mark in his pre-apprenticeship experience with Landman Corporation in that first year because they missed the deadline to join the consortium. Bond-Regis would join later. Mark was in the company's first cohort of apprentices and was recruited from Industry 2's cohort group after their recruiting and screening process was complete. Mark did not make the cut to become an apprentice at Landman, but based on positive reviews Bond-Regis was interested in picking him up. Bond-Regis was brand new to apprenticeship when Mark came on board, and it was a learning experience for everyone. The company designated a position to work closely with the

training of the apprentices who also collaborated with both Patsy and Mr. Truly to emulate the other successful apprenticeship programs in the consortium.

Apprentice 3: Individual Textural Description

Mark first became aware of the apprenticeship opportunity through an intentional and purposeful campaign that was developed by Mr. Truly and Patsy. Mark admits that with his ability to work with his hands and his mathematics skills, he thought becoming an apprentice would be a breeze. He recalls, however, that during the process, there were times when he knew he was not giving it his all. Mr. Truly reached out to Mark during that time, creating a greater sense of awareness in him about the career opportunity he was embarking upon. Mark describes his initial thoughts about the opportunity and his interaction with Mr. Truly when things did not go as easily as planned:

> I know that we had some conferences, student assemblies, where individuals from the apprenticeship program came in to talk to the students and you'd see posters and such. The teachers mentioned it every once in a while. So, there was definitely structure and push from the school to go and try to move students towards this path.
>
> The initial testing wasn't particularly hard, just vision tests, how well can I read a blueprint and make a part or assemble something. So, once I got selected from that and got put into the pre-apprenticeship intern track I thought I was ok and I didn't try my best in my community college courses.
>
> I think one of the things that Mr. Truly told me about halfway through my pre-apprenticeship program, it was information from a Harvard study or whatever where it was just out of the 100 major cities in the United States, Charlotte was probably like the second worst in terms of moving to a higher social economic status than you were

> born into. So, my family wasn't poor but at the same time we weren't really well off either. I feel like slowly but surely, I'm helping raise us out of that. So, it's just like realizing the responsibilities you have.
>
> I think one other thing that was mentioned is just if you have your two-year degree, you can make more money than a person who's still in school still working on their four-year degree. I started to take it more serious.

Patsy did a lot of planning to develop career exploration activities with the high school. She worked with Mr. Truly to set up speaking engagements in addition to company tours. Mr. Truly also did specific career awareness activities including assessments and field trips to find candidates with the ability to fill the apprenticeship position. Mr. Truly talked about his approach in helping Mark understand his career options:

> We're sharing a great deal of data with our kids and here's how we're helping him--here's the data and information. I can't make this decision for you, Mark. And we want you to do your career assessment and see how it comes up. I can't tell you what gives you happiness and energy about what you're doing. Right? But when I see in your top 10 that it's engineering and it shows up as a machinist, I can tell you. You don't know what machinist even means. But I'm gonna go out and be able to show you, and you're gonna go on field trips. So, we encourage him to become aware. Informed. Become exposed. And then based upon the things that you like, if you say you like that, I'm gonna tell you it's okay to go to the community college. That this is a valid pathway.

Mark admits that his foster mom was supportive, but given her age and responsibilities at home he is not sure how much she understands about what he does at Bond-Regis. Despite that, he describes how she has always been there for him during the apprenticeship to encourage him:

> Mom really wasn't sure what it was about. Five years later, I still don't think she knows exactly what I do but she was all for me getting a free education, getting job training and skills. So, she was definitely a big support to it. I owe her everything for waking up at 5:45 in the morning to go and take me to work.
>
> She's definitely been a huge support and proponent for apprenticeship programs, especially in my case.

This support was also seen by the company when he participated in the pre-apprenticeship. Pasty said:

> I can remember his mother dropping him off and picking him up during the summer pre-apprenticeship program. It was a requirement that when you went to the facility's tour that you had to have a parent or a legal guardian with you. So, his mother came to those events with him. She also would have attended the open houses, because that was a requirement.

Mr. Truly also expressed the support he witnesses from home:

> Well, his mom definitely went to the open house, where parents are required. So, we'll have optional open houses at our high school. And then we'll tell them; there is going to be an open house, at Landman, and Bond-Regis, on one Saturday in January. And at that one, one of your parents have to be with you. 'Cause they have to be exposed to this model, right? Parents during this--We try to make them aware at the same time.
>
> Mark is a Foster kid. He is the oldest of five, and his mother is in her 80's. She's older. But she made sure he had a ride and was there to pick him up.

Mark received a lot of guidance before and during the apprenticeship process from Mr. Truly, the CDC at his high school. Mark refers to Mr. Truly as his mentor. Five years after

graduation from high school, they still keep in touch and grab dinner every couple of months. In fact, Mr. Truly continued to work with Mark and the company very closely, even after Mark left high school. Mark reflects on Mr. Truly's dedication to the program and to him and explains that it was Mr. Truly who helped him see his second chance with the apprenticeship program:

> One of my mentors at my old high school Mr. Truly told me about the apprenticeship program. He was definitely a huge influence over my decision to go into the apprenticeship program and I'd say that's probably the case for most of the students in the program. It's something that he cared about very deeply; students and our success. Obviously, the teachers and other administrators did as well.
>
> I trusted his guidance. I mean he was experienced. He'd been in business for a long time. He always backed up everything that he said with research, the statistics, facts, whatever you want to call it. So yeah, I had no reason not to trust him.
>
> I didn't make the apprenticeship my first try. In the pre-apprenticeship, you know, there are obligations that they're expecting me to fulfill them. I didn't show them that I can fulfill these. So, when Mr. Truly talked to me next year like, "Oh, that didn't go all that great. You want to try again?" I'm just like, "Yeah." Oh my God, I got the apprenticeship with the company I'm currently at now, Bond-Regis.
>
> When my performance at work during the apprenticeship would slip some, I guess the management at Bond-Regis liked me, and part of it is, they probably don't want to get egg on their face from me failing or flunking out of the program or something like that, so, they reached out to Mr. Truly. Then, Mr. Truly would reach out to me, just talk to me about work, where my mind is at, what's going on in my life.

> What are the things that are bothering you? Sometimes it's just like, "I don't know if I really want to do this anymore or I'm just bored." I don't know, whatever the case is and he just gives suggestions, "Hey, maybe you want to go and find a different department you want to work in. Maybe you might want to get tutoring at school to go and help you with your work. You want to go and find a mentor at the plant maybe." Just maybe things I already know but when you hear somebody else tell you, sometimes it clicks and makes a difference. So, really that was just somebody to go and just be a sounding board, listen to what I had going on that I felt really cared and understood what I was going through.

Mr. Truly recalled:

> Yeah. You know, I mean, we can talk about Mark. And Mark had some rough times going through. But I'm close with Bond-Regis and the employers, right? And they shared some things that Mark was having some problems in school, or something. So, we started ... I started a formal mentorship program.
>
> I'm still meeting with him. Two, maybe two years ago, I put in an intervention (for some issues) that they told me they were having some challenges with--He was at Bond-Regis and they didn't know if they were gonna keep him on. Right? Or if they were gonna offer him a job afterwards. So, you know, he and I started meeting more regularly. And checking in. And how are you doing? How are your grades at school, at community college? You know? But part of that too, he started to share with me, you know, "Yeah," and he says, "I gotta pick up my game. You know?" …Yeah, you know, I help fill the gaps. You know.

Patsy also praised Mr. Truly's efforts to support Mark in his pre-apprenticeship and apprenticeship:

> Mr. Truly is kind of a superstar CDC. Continues to be to this day. And he really looks out for kids who are maybe underrepresented, need an extra opportunity. He continues to be an active supporter of the Landman and Bond-Regis youth apprenticeship programs. And he and I still stay in touch as well. And one of the interesting things that happened as a result of that relationship and of Mark going into the pre-apprenticeship program with our company and then becoming an apprentice at Industry 3 is that Bond-Regis donated money to the high school to actually put in a machining lab, which is kind of unheard of these days.

Both Landman and Bond-Regis provided supportive services to Mark from the pre-apprenticeship phase to the completion of the apprenticeship. Mark describes his relationship with the companies:

> It was a lot of mentoring and talking to. I guess I had to be told things multiple times, it still took a while for everything to sink in. It probably wasn't until about the third year of my apprenticeship that I was just like, "Oh crap, this really is a huge opportunity. I don't want to blow it." So yeah, definitely a lot of mentorship. At my current company, Bond-Regis, there is a guy who has been a really big mentor and help for me. Just going out doing things with him, going to lunch, working in his department, going to meetings, and such. Just understanding all the different aspects that it takes to survive and thrive in a huge company like Bond-Regis is. Having someone on the inside who cares about you and really wants your success really helps as well too.

> Overall, they were just ... I guess they were happy to see young people in there. The company is really good about tuition reimbursement. So, if I continue to go and take more classes in relative fields and maintain a high enough GPA, I'll get reimbursed for my tuition. So, it's just like that's a barrier that a lot of people may have with education. How do I finance this?
>
> So, just knowing that that's not something that I have to worry about as much as others just really helped out a lot. So, it's just a great thing that I have professionally at a company that values or appreciates the importance of educated workforce.
>
> And at Landman, I mean at least I know when we were first beginning the process, the pre-apprenticeship selection phase, they would mention that they would probably be investing a total of like $175,000 in each of us over the next four years or so and I could definitely see that. They could easily have gotten somebody older and more experienced to go and fill the needs that they had but the fact that... to me, I feel like maybe they just realize it might be more cost effective to go and just train us while we were younger. At the same time as they continue to put the time and the hours into us we're realizing we're getting paid pretty well even to go to school.

Patsy's company chose Mark for a pre-apprenticeship position and paid his tuition. They did not eventually choose him for an apprenticeship slot at the company. She discusses the decision and why she advocated for Mark to enter apprenticeship at Bond-Regis:

> Landman Company was paying all of his tuition, paying for his books and fees, and he was making a $10.00 an hour wage for the week. So, for a young person, a $400.00 a week paycheck is really, I think, a big deal.

Choosing our first cohort of apprentices was a business decision and an investment. And my job as the Chief Learning Officer was to make sure we got only the best of the best into our program. One of the things that our plant manager was really stuck on is he didn't want kids to drop out of the program. I tried to tell him that historically, that is going to happen and he had a very hard time accepting that. So, he saw us making all this investment in these young people and then they decide that this is not for them, and what I tried to tell him was that it's really better to know up front that it's not for them than to invest in them further and then have them fall out of the program.

And so, I did not choose to keep Mark after the summer pre-apprenticeship program, but I did work with another company, Bond-Regis, who was just starting, who had shown some interest in him, and he ultimately got picked up over at Industry 3 as a full apprentice. So, it was really a team effort.

We had mentors for the youth pre-apprentices, so we had people who would help them, would introduce them to work. So, one of the rules was Landman did not allow anybody in the facility to work under the age of 18 and so one of the things that we made sure of is that they were getting the right experiences in the facility without being in any kind of danger.

I didn't have a very big team at the time. Really it was just me and an admin and then I hired one of the teachers from the high school to help me kinda sequester the kids over the summer and keep them accountable. Make sure they got where they needed to be.

> I felt like Mark was a really good kid and he needed a break. And that's why I really worked with Mr. Truly, his career development facilitator, to really try to find him a spot because I felt like getting into a program like that could be a game-changer for him. So, I was an advocate for him as well as his CDC. Mr. Truly and I we both were advocates for Mark. I was thrilled that he got to Bond-Regis.

Bond-Regis' apprenticeship coordinator monitored Mark's progress. Mark says that though there were times his progress would slip and he wanted to give up, the company recognized this and contacted his mentor, Mr. Truly. Mark explains how the apprenticeship coordinator whom he refers to as his mentor at Bond-Regis also stuck by him through the apprenticeship process:

> I may have goofed off when I was at community college and not have the greatest of grades. They were passing but they could have been a lot better. I knew that, the teachers knew that, and the apprenticeship program coordinator at Bond knew that as well.
>
> I think that's what it was, age and maturity. It's just like sometimes people don't give you a second chance after you goof up. Thankfully, I did get one, so I guess that just goes back to having a great support system of people in place to care about you and help connect you with different opportunities that may be available.

Landman and Bond-Regis joined a consortium of industries who were also trying to create a pipeline of machinists to fill jobs in the local economy. This consortium model in the area was created to provide recruitment support between the companies and form sections, or cohorts, of related education at the community college. Mark describes his relationship with his fellow apprentices:

> The apprenticeship was a lot of fun, a lot of different things to learn. Absolutely love to death my fellow apprentice, Cee. She was a really big help too. It's funny, like as much as there could be a lot more Black men or males in the apprenticeship technological engineering fields, how much more so for Black women to go and be in those fields as well. Cee has helped me so much. Just someone to talk to who can help me with school or whatever.

Mr. Truly also saw the influence that the cohort members had on each other:

> They are doing it together. I think that helps a lot. I think for all those kids. You know. That it helps in that they're going through the same stuff. Right? And that ability to kind of share, I'm not out here on the island all by myself. And there are other kids. You know, people are helping me this way, and that way. Right? In that space. That, yeah, that support function. And a lot of those kids depend upon it.

Patsy commented on the value of Mark's experience in the cohort:

> And so, you know, I think that without some kind of support mechanism, it'd be very hard for a young person to complete a program like that.

Mark identified that for him, it took support from different people throughout the experience to keep him on track. He also explained how being made a part of the apprenticeship and the over-arching support system encouraged him:

> So, we didn't talk about it amongst ourselves a whole lot but that was something that was mentioned to me by Mr. Truly was, you don't want to mess this up for the other students who come along as well. And, while he didn't say it, that's really kind of where my mind went to. Yeah, I think that's just the biggest thing that the apprenticeship taught me and helped me get through recognizing the responsibilities that I had to other

people and then seeing how they were interested in trying to fulfill what responsibilities and obligations they felt they had towards me by working with each other, working with myself. I was able to go finish my four years, fulfilled and my obligations.

The company cared about my input about the program. Talking to one of the leads at Bond-Regis about different things that we'd done over our apprenticeship program and just being like, "Yeah, I think this would be really great for them to do. I wouldn't suggest you making them do that like we had to do." Just helping them go and develop more structure around their program because it was a first for them at this location. So, it was definitely touch and go. Your support system. You have to have a support system. People inside the company who care about you and want you to succeed. People that serve as mentors outside the company to go and help you develop your professional and personal skills. Definitely help from the family. Filling in whatever cracks and whatever it is that we need to go and get through. So really, I feel that's the biggest thing. Your success is your own, you have to be self-driven but at the same time it always helps to have people surrounding you who want you to succeed as well. So, I think that was just the biggest thing for me just knowing that I had a team of people who cared about me and wanted me to do well really just motivated me when I didn't just feel like doing things.

Mark attributes some of his success to his personal dedication and hard work to make it through his coursework, figure out how to problem solve, and manage his time. But he also describes understanding the opportunity that was before him and pressing forward, even when he wanted to give up:

> I think it was just the opportunity every day to pick up a different skill whether it be something directly related to what I'm working on, applications, trigonometry, or something or developing soft skills, the ability to communicate, explain ideas clearly whether it be in a paper or report or talking to someone. Just the opportunity to go and continue my personal and professional development on day in day out basis was something that really stood out to me cause sometimes you may have to do multiple processes of the same thing. And, I guess it was interesting and a bit of a challenge for me personally to go and make sure that I stayed on top of everything without falling into a rut of complacency. So, just the opportunity to challenge myself, just something different, completely out of the ordinary that I would have never given any consideration with something that hooked me. And, even all this time later I'm still learning new things and developing new skills.
>
> It was just a huge sense of accomplishment. It was a lot of hard work but just knowing that I finished it, I was just able to think about all the skills that I developed. I always thought I was a pretty good public speaker but having to go and do that more often, that's just another skill that I felt got better. Not being nervous or anxious or agitated when I'm talking to people. Being able to complete tasks on a timely manner. The application of different concepts that we've learned in school whether it be high school or college. Just really being able to sit back and appreciate just everything I'd done, all that I'd accomplished and the people that helped me do it.

Patsy saw in Mark a young man who had good character and was well-behaved. She described him as friendly and intelligent. She felt there was something special about this young man and he deserved a chance. Mr. Truly shared these sentiments about Mark:

> Mark is different than most ... His socio-economic class, with the seriousness that he approaches work, and his soft skills. I mean, Mark, the way that he probably stood out, especially early on, is-- one, he did well, mostly, in classes. But also, his soft skills. Right? And the way that he interacted. And our ability to get to know him, and what his interests were, and sharing what his interests were. And then, like we say, personalization becomes a key core value.

Results of the Study

In accordance with Yin (2009), a case study allows the researcher to explain a phenomenon by stipulating a presumed set of causal links about how or why something happened. The following narrative will link the research findings of lived experiences of three Black, male youth apprentices to the underlying theoretical propositions of the research to be discussed in Chapter 5.

Theme 1: Career Awareness. Each of the three apprentices began the process by participation in authentic career development exercises through the Career and Technical Education program at their school. All of them indicated their awareness of a "career counselor" who was visiting classrooms to help students define their career goals. Likewise, all three could recall taking career assessments that identified their strengths and workplace skills. The two CDCs in the study both described how they used career assessments to locate talent for the apprenticeship program. Students' test results were used to select the data and information the CDC would use to develop and customize presentations and use in one-on-one discussions with students. This then led to the development of targeted work-based learning activities for students to see first-hand the work-environment and the economic advantages of pay and benefits offered by the companies. Both CDCs then tightly coupled

this idea of economic mobility in an occupation with the benefits of a community college education to debunk the stigma of a non-baccalaureate pathway. By presenting the facts about labor market data and providing a tangible way for students to connect them to opportunities in local industry, the CDCs gained the trust of their students in the advising process. The apprentices and the industries all attested to the critical role the CDC played in developing targeted career awareness strategies that supported informed decision-making for each apprentice.

Another facet of career awareness occurred within the industry during the recruitment process. In all three cases, the company visited the apprentice at the school and required the apprentice and his parents to visit the company. Additionally, all three apprentices participated in an orientation where they completed a project and participated in college placement testing before being offered a pre-apprenticeship slot. All of the apprentices indicated that going into the company and applying their math and hands-on skills in an authentic setting increased their understanding of the apprenticeship position they were seeking and the career opportunities in the company. Though only two of the three apprentices initially completed the pre-apprenticeship with an apprenticeship bid, they all articulated that the pre-apprenticeship opened their eyes to what an apprenticeship had to offer and spurred a sense of competitiveness in them to earn the spot. Initially, two of the three apprentices had settled on the four-year degree route in engineering. The other apprentice wanted to go into the military. All of them learned through conversations with the CDC at their respective high schools about the benefits of earning an associate's degree that is paid for by the company. Both of the former college-bound students and the military-bound apprentice now have opportunities through their companies to further their education

in engineering at a university if they so choose and have been made aware of the opportunity. All three of the participants indicated that, though skeptical in the beginning, entering the engineering field through the apprenticeship route has given them more opportunities than their friends who attended a four-year university right out of high school. All three of the apprentices used the word “pathway” to describe their journey from high school to post-secondary completion and stated that each company made it very clear how they would start within the company and how they could move up. What all of the apprentices found enticing about working for the company was knowing how they could move beyond their apprenticeable occupations into other departments and roles to not only make more money, but have an opportunity for more education.

Theme 2: Economic Mobility. How the apprentices began to define success tangibly and ideologically through exposure and opportunity shaped the transformative underpinning of each of their stories. All three apprentices entered the recruitment process after they were made aware of the benefits, hoping to rise above the situations they came from. Each of them attested to the fact that the ability to earn a college degree for free, earn full-time employment benefits and make higher than minimum wage all by their first year out of high school is what not only drew them to the program, but sustained their successes. All three apprentices saved their money to buy their own transportation, are free from college debt, and report being better off financially than their parents while only in their late teens and early twenties. Additionally, all three discussed the personal gratification they felt being able to give back to their families financially. Each of them indicated the pride they feel in knowing that they have accomplished something by completing the apprenticeship program and earning their degree. They stated that they see completing an apprenticeship as the

beginning of their success stories. All three indicated the high value they now put on having a solid career path, setting concrete goals and choosing the right type education to achieve those goals. The experience has had a profound effect on each of them by transforming their ideas about how success after high school looks, and more importantly according to them--how they see themselves as contributing members of their families, companies and local communities. They not only desire to create a better life for themselves, but describe that through apprenticeship, they now have the tools and network to ensure their success.

Theme 3: Wrap-Around Supportive Services. Perhaps the most compelling and robust similarity among the three apprentices is what can be described as wrap-around supportive services that began in the early days of recruitment, which led to pre-apprenticeship and persisted through the years of the apprenticeship program. In each of the three cases, the recruitment process began and ended with a focus on the intrinsic qualities of the apprentices supported throughout by the intertwining roles and actions of their parents, CDCs, industry mentors and fellow apprentices.

Each of the three apprentices was described with similar traits and qualities that made them good apprenticeship candidates from the beginning. All of them were said to be open to the opportunity with a drive and desire to achieve more than their present circumstances allowed. The support staff working with the apprentices acknowledged that regardless of the support needed along the way, they approached the opportunity with an overall positive attitude, good soft skills and a willingness to learn. They also described each of the apprentices as having an aptitude for the type of work they were doing along with good academic and hands-on skills. From the beginning, apprentices were allowed input into the process. After spending time learning about the companies through interest meetings and

tours, each of the three apprentices was given the opportunity to provide input on their preferred pre-apprenticeship site if they were to be selected for the next phase. Once in the program, they were asked to give feedback to improve the program, participate in mentoring new potential apprentices, and join the recruitment effort with the company by going into local high schools to tell their story.

Another commonality among the three apprentices was the support of their parents. Though their backgrounds and barriers were different, each of them had someone in their home who supported them by encouraging their decision. Their parents all attended open house tours at the company. Though Apprentice 1 may have had the most interactive parent and extended family, all of the parents put themselves in a position to be well-informed by the company and the school about the program. In the case of Apprentice 2, his parents' influence made the difference in his decision to move forward in the process. The parents worked to provide the apprentices with transportation until they could afford their own as noted by each of the support staff working with the apprentices. Additionally, all parents were described by their apprentice as using positive and affirming language about pursuing the opportunity. It was stated by each CDC that the parents attended the apprenticeship signing ceremonies and displayed great emotion toward their apprentices' accomplishments. In the case of Apprentice 1, the family sat with the CDC at the event.

The high school CDCs in this study are both a part of the support mechanism that connects the home and the apprentice to the industry. They each provided career development activities early on aimed at developing career competencies including informative career assessments, field trips, classroom presentations and marketing campaigns. Each apprentice described an understanding of his abilities as related to careers

from these preliminary exercises. Additionally, this understanding of their career interests made it easy for the CDC to recruit the apprentices for the program who had a proclivity toward the type of work in the apprenticeship. It also set them up for success in the recruitment phase as each of them expressed that the orientation process and pre-apprenticeship experience offered tasks that they were not only successful at completing, but that also challenged and excited them. Both of the CDCs took personal responsibility for ensuring the success of the apprentices beyond recruiting them for the program. CDC 1 and CDC 2,3 formed a type of mentor/apprentice bond with the apprentices. They were available to them throughout the process, particularly as they transitioned from high school into community college coursework and on-the-job learning. Each CDC communicated with the apprentices via text, phone call, email and face-to-face meetings on a regular basis, and all three apprentices indicated that their CDC was always available to them. By all accounts, the CDCs did a lot of encouraging and supporting through conversations and sometimes more tangible means including transportation, providing meals, setting up individual tutoring and accompanying them to company events. Both CDCs also formed tight bonds with the industry representatives at the companies. Industry representatives working with all of the apprentices praised the dedication the CDCs had to the success of the apprentices.

The industry representatives also relied on the CDCs for support with the apprentices when challenges arose. Apprentice 3 stated that his company regularly reached out to the CDC when he was having difficulty in his apprenticeship. It was noted in each case that the CDCs continued their mentorship with the apprentices even after they had left high school. The CDCs talked about their current relationships with the apprentices, and both remain in touch with the apprentices on a regular basis even though they exited high school years ago.

CDC 2,3 has regular meals with his apprentices to continue the mentorship, while CDC 1 calls on Apprentice 1 to partner with her on projects at the school. He has even become an advisor for her. She describes him as, “a text away.”

Each industry in this study has someone in place at the company who oversees the training of the apprentices. The apprentices described these people as their go-to person at the company. Early on, these representatives came out to the school to meet the apprentices. They also worked with them during the orientation and pre-apprenticeship process. Since the industry representative decides who will receive apprenticeship offers, they become very familiar with their apprentice early on. Once hired on by the company as an apprentice, the industry representative stays in close contact and is a familiar face. Each of the representatives stated that they talked to the apprentices every day. The apprentices all indicated that the representative that recruited them would do whatever it took to help them succeed from being a listening ear to arranging tutoring sessions or reaching out to find other support from the college or high school. The industry representatives said they monitored closely the apprentices’ community college progress and worked with their mentors on the shop floor about the on-the-job learning. All of the apprentices described positive interactions with the mentors working on the floor who were selected to teach them the job tasks. Apprentice 2 recalled one of his mentors changing his viewpoint of youth completely after working together. The apprentice described this mentor as one of his best friends, though he was 30 years his senior. All three apprentices told about advice that their more seasoned mentors gave them. At Industry 2 one of the engineers took it upon himself to tutor the apprentice in math when he heard Apprentice 2 was struggling with some of his community college coursework. The apprentices expressed personal pride in being

recognized and commended by their mentors for their talent and work ethic. The apprentices attributed the apprenticeship with creating a positive culture within the company between different generations of workers. They all felt welcomed and part of the company.

Because all of the companies in the study operate as part of a consortium, they hired apprentices from a cohort of students who went through the recruitment together. All of the apprentices were able to identify other apprentices with whom they had created a bond. All apprentices in a cohort of recruits, no matter their company, attended community college classes together. The three apprentices in this study described not only finding support but friendships in the cohort across and within companies. The collaboration among these aspiring apprentices started early in the orientation where the candidates completed hands-on projects together. Apprentice 2 stated that even though they were all competing against each other, they knew that they had to help each other out if they were going to succeed. The apprentices relied on each other for tutoring, transportation and emotional support. Apprentice 3 said that it was a fellow apprentice at his company that challenged him to stick it out and that he still relies on her for support at work.

The apprentices all described the sense of accomplishment they still feel completing their apprenticeship. As a result, they have become ambassadors for the youth apprenticeship program in their local areas. All three of them work with their industry representative and former CDCs to recruit other students into the program. Apprentice 1 is a student advisor at this his former high school. The industry representatives and CDCs all attest to the power each apprentices' story has in capturing the attention of other youth who may identify with them. The apprentices not only work to recruit and support other high school youth, but they also have been instrumental in refining the programs at their companies. All three apprentices

talked about times when their input into the program was sought out by their industry representative. Moreover, all three reported that they could see the changes implemented in the program. Apprentice 2 commented that not only did they seek his advice, but they used what he said to change the program and added that, “you don’t usually see that.” The three apprentices recognized that they had multiple levels of support and that they were not operating in isolation. Parents, CDCs, industry representatives, shop floor mentors and the apprentices themselves were all part of the support structure in the apprenticeship program. Apprentice 3 stated that the support from all sides of the program always filled in the gaps for him.

Research Questions

The research data obtained from semi-structured interviews with the three apprentices about their lived experiences in the apprenticeship program provided answers to the following research questions:

1) What are the lived experiences of Black males who were successful in completing a registered apprenticeship program?

All of the apprentices were exposed to intentional career awareness activities during high school that prepared them for the apprenticeship recruitment phase. They all participated in programs with similar structural characteristics (question 2) and benefitted from support from parents, CDCs, industry representatives and their cohort. All of the apprentices described themselves and were described by others as having similar behavioral characteristics and aptitudes (question 4). They overcame barriers by utilizing the support network around them and later joined the support network to help future apprentices. Each apprentice spoke about the transformational experience of being an apprentice and how their

view of success changed from the process. The tangible benefits of earning a free college education while being paid has impacted their economic mobility and created stability.

2) What are the structures and characteristics of the program in which the Black, male student participated?

All three case studies included programs with similar components. The programs started with career awareness at the high school including assessments and lessons by the CDC that were purposefully linked to labor market data and post-secondary requirements. Recruitment activities for the apprenticeship were a joint effort between the high school CDC and the industry representatives and offered the potential apprentices a way to see first-hand how their skill sets matched up with a career pathway at a company. The industries in this study were all part of a local group of industry partners who formed a consortium to fill specific jobs in the area. CDCs distributed information throughout the school and set up field trips and times for industry representatives from the consortium to meet with students. At both high schools, recruitment materials were culturally and racially diverse, using male and female representations in the pictures. CDCs assisted students in completing the application requirements that were developed with the local consortium members. They kept in touch with the apprentices regarding open house tour dates and other activities related to recruitment, frequently giving them an extra nudge. In addition, all of the apprentices were required to involve their parents in recruitment activities. Each program also used an orientation period that lasted several evenings as a recruitment strategy for the pre-apprenticeship opportunity. The companies, with help from the school, worked several evenings with the candidates on hands-on projects, math lessons and academic testing. From there, the companies convened to determine which applicants would be offered pre-

apprenticeship opportunities. All of the apprentices started in a summer internship program called a pre-apprenticeship. The pre-apprenticeship was a paid experience that lasted six weeks. Students worked at the company learning about different areas to determine which department would be a good fit. All of the pre-apprenticeships included summer classes at the local community college to gauge how well the apprentice would perform. In all three cases, the apprentices were paid for their on-the-job learning and the time they spent in class. Two of the three were selected from their pre-apprenticeship to become apprentices for their senior year of high school. The third apprentice re-entered the application process and was chosen on his second try. The apprentices all attended signing ceremonies in their local area that were supported by the consortium. There, each signed with their respective companies and became registered with the state and USDOL as an apprentice. At all three signing events, representatives from the industry, the high school, the local community college, local community supporters and government officials greeted the apprentices and their families. Each signing ceremony included food and welcoming gifts for the apprentices. All of the apprentices immediately entered a community college associate's degree program and started work at the company upon being hired as an apprentice. Once they graduated from high school, all three apprentices worked and went to school full-time and received the benefits of full-time employment. The company paid for their community college tuition and offered study time and tutoring opportunities. The apprentices completed about 2,000 hours of on-the-job learning in addition to about 144 hours of related education in each year of their apprenticeship. The programs varied in length depending on the occupation, but the hours in the pre-apprenticeship counted toward completion of the apprenticeship for all of the apprentices. The apprentices were paid on a progressive wage scale that was determined by

the consortium members for their specific occupation. The apprentices received incremental increases in pay as they learned new skills and completed coursework. Their related education at the community college was also determined by the consortium of industry partners in coordination with the local college. In all three cases, the cohorts had course sections created for their group to help them better manage work, high school and community college coursework in the early stages of the apprenticeship. At the end of their apprenticeship, all of the apprentices achieved the Journeyman's certificate from the USDOL, the North Carolina certificate of completion and an associate's degree in their respective occupations. All three apprentices are aware of their career pathway within the company and have been offered opportunities to move forward with tuition reimbursement for a four-year degree.

3) What roles did adults play (i.e., Career Development Coordinators, school counselors, instructors, school leaders, community mentors, industry mentors, parents/guardians) in the process?

None of the apprentices discussed the role of the high school counselor in their apprenticeship process. Only one apprentice discussed roles at the community college that provided support. Emphasis on the role of the shop floor mentor who helped with the on-the-job learning components of the apprenticeship was stronger with Apprentice 2 than the other apprentices. The importance of these relationships, however, was mentioned by all three apprentices. The apprentices focused on four key roles in their apprenticeship development that made a difference: parents, CDCs, industry representatives and apprenticeship cohort members. Each of these roles according to the apprentices filled in gaps when problems arose throughout the program. They also noted that they sensed the communication between all of

the support roles to ensure their success. Each person supporting the apprentice used affirmative language and exhibited an attitude of acceptance about the apprentice's choice to accept a free two-year associate's degree with on-the-job learning versus a four-year degree with college debt and no practical experience.

4) What did the Black, male student who completed an apprenticeship attribute to his success/ability to complete?

All of the students said they could not have completed the program without the help and affirmation of their support network from beginning to end. They also attributed their success to their own personal qualities and drive. Each apprentice described their desire for more opportunity and stability than what they had growing up. They described a keen awareness of what the apprenticeship could offer them. They each described overcoming the challenges they faced in the process as personally satisfying and something that kept them engaged. A sense of accomplishment and continuous recognition of their skills and abilities either formally or informally was mentioned by all of the apprentices as a motivating force that helped them to push through the program. The apprentices who first envisioned themselves as four-year degree students, articulated confidence in their academic and hands-on skills and exhibited pride in describing themselves as smart and good at working with their hands. This sense of self-efficacy was a key to their successful completion of the program.

5) What barriers, if any, did the Black, male student face and how were they overcome?

Few of the same barriers were mentioned by all of the apprentices. As stated by Industry Representative 2, all apprentices excel in different areas and tend to rely on each

other. All of the apprentices said they sought solutions quickly from their support network when they had trouble. An initial barrier each apprentice mentioned was overcoming the four-year college mentality as their only pathway to success. When the school and industry partners used real-life data and career development experiences to build rapport and create trust with the students about the viability of the apprenticeship program, this was quickly overcome. Into the process, the need for transportation was mentioned by one apprentice and two apprentices mentioned the need for extra academic support. The support structure formed within the cohort between apprentices and their peers mitigated these issues. Additionally, the high school CDCs offered support in these areas on an as-needed basis. One CDC developed a mentorship program to keep the apprentice engaged and supported. Apprentice 3 was the only participant who mentioned bouts of doubt or thoughts of quitting the program. This was quickly addressed when the company reached out to the former CDC for assistance with supportive services. The apprentices said that their needs were always met by someone at the school, company or within the cohort and that there was a level of trust established that encouraged them to speak up to receive the support they needed. The industry representatives were said to have constantly reached out to the apprentices to ensure their success and stay abreast of their needs.

Summary

This chapter is a record of the personal descriptions of the lived experiences of three Black, male youth apprentices during and after their CTE apprenticeship program. Their experiences are reinforced by the stories of the support staff who worked with them at their high school and industry site. The information gathered from semi-structured interviews with each apprentice, CDC and industry representative is triangulated, as described by Yin (2009).

This triangulation was used to derive themes from the participants' data about the successful completion of the apprenticeship experience that relate back to theory. Through the use of intentional career awareness activities and data by the CDCs and industry representatives, the apprentices were each able to identify that they were surprised at how uninformed they had been about viable post-secondary options outside of a four-year program. This new information ultimately led them to take a chance on the apprenticeship program and influenced each apprentice to become part of the support network for other apprentices by sharing their success stories. Each apprentice described the experience as life-changing. All three indicated that their view of the importance of getting the right kind of education to align with their career goals has changed and they now consider themselves life-long learners who know how to define their success. They also developed a sense of accomplishment that all said transcended them. None of the apprentices imagined the magnitude of the opportunity and success that they would experience completing the program until they looked back to see all that they had gained and accomplished. Each apprentice mentioned recognizing the fact that unlike themselves, many of their peers were saddled with debt or under-employed after following a traditional four-year degree path.

Chapter Four reveals three themes that emerged from the research that support how and why the apprentices, in their own words, experienced success in completing the apprenticeship program: 1) Career awareness including the knowledge of how the student's abilities and aptitudes connect to understanding a career pathway and the type of education needed to define and achieve personal success. 2) Economic mobility and the transformation that occurred in how the apprentices viewed the role of apprenticeship in improving their socioeconomic status. 3) Wrap-around supportive services that began and ended with the

apprentice's personal qualities that were supported and developed throughout by collaboration among parents, CDCs, industry representatives and peers. The chapter concludes with answers to the research questions posed in the study.

The next and final chapter, Chapter Five, contains an overview of the study and an analysis of the results from Chapter Four including their link to the literature and theoretical frameworks. It concludes with an analysis of the gaps in the research and implications and recommendations for future research.

Chapter V: Conclusions

Introduction

Chapter Five is the final chapter in this study. It provides an overview of the themes studied by the researcher. The chapter begins with an analysis of the major findings and links them back to the literature review in Chapter Two. The gaps in the findings are identified that support the rationale for the study in Chapter One along with the limitations of the study. Next, the theoretical frameworks used as the underpinnings of the research are revisited and applied to the themes. The chapter concludes with implications for educators and recommendations for future research.

Analysis and Links to the Literature

The major findings of the study yielded three themes that link the literature on Black, male participation in work-based learning programs back to the research. The multi-case study of the lived experiences of three Black, male youth apprentices produced the following themes related to recruitment and retention of the participants: 1) Career awareness including the knowledge of how the student's abilities and aptitudes connect to understanding a career pathway and the type of education needed to define and achieve personal success, 2) Economic mobility and the transformation that occurred in how the apprentices viewed the role of apprenticeship in improving their socioeconomic status, 3) Wrap-around supportive services that began and ended with the apprentice's personal qualities contributing to the apprenticeship process that were supported throughout by collaboration among parents, CDCs, industry representatives and peers.

Theme 1: Career Awareness. In accordance with Symonds, Schwartz, and Ferguson (2011), youth today are experiencing a lack of clear connection between programs of study

and tangible labor market opportunities. Preparing for future education and an occupation are core challenges of adolescence. Multiple factors shape the formulation of post-secondary decision-making including personal preference, perceived abilities, and perceptions of prestige (Beal & Crockett, 2013). There are several conclusions derived from this study about the purposeful implementation of career awareness activities and positive outcomes for the three apprentices in the recruitment and completion of the apprenticeship experience. In all three cases, career awareness education was intentional on three levels: with high school staff, with parents, and with the students.

In apprenticeship programs where Black, male youth are successful, industry takes the lead in marketing the program in the local community. Industry representatives interviewed for this study all developed awareness campaigns and materials for the support staff at the local high school prior to launching the program. Staff members including administrators, teachers, counselors, and CDCs were invited to participate in industry tours hosted by the companies. One industry provided paid internships for teachers at the company. To challenge the stigma of a non-baccalaureate pathway, educators must see and experience the apprenticeship opportunity for themselves before they are asked to talk to students about it. When interviewed, each industry representative indicated that high school support services are often their biggest hurdle in attracting a qualified workforce. This is echoed by Symonds, Schwartz, and Ferguson (2011) who stated that educators must begin reframing how they think about post-secondary success and expand opportunities for low-income and minority students through comprehensive efforts that include supporting multiple pathways in vocational education. As evidenced by the descriptions the apprentices provided about their interactions with school staff, CDCs and teachers at the high schools who are

informed, believe in and can articulate the value of the apprenticeship program have great influence in the student's decision to commit to the program. The CDCs at the schools presented students with specific data and provided career assessments that apprentices could use to link their interests and abilities to the opportunities in the apprenticeship program. The apprentices were able to make informed decisions that gave them the confidence to overcome the four-year college mentality pervasive in their schools. Goyette (2008) states that students from every socio-economic background perceive four-year college to be a rite of passage for all young adults regardless of whether they obtain a degree that leads to a job. When the CDCs showed the apprentices the facts about the career potential for an apprentice earning an associate's degree along with the amount of money they would make working and receiving a free education, the apprentices all changed how they defined post-secondary success. For apprenticeship programs to be successful, industries must partner more deliberately and consistently with high school programs to create best practices to ensure that school staff is informed and clearly understands the options they are presenting to their students. The more closely information about career opportunities at a local company align with career awareness activities at the high school, the more likely students like the Black, male apprentices in this study can confidently make post-secondary decisions that facilitate their success. For this reason, each high school needs a career development coordinator who is dedicated to developing student interests that align with tangible post-secondary opportunities available in local industry.

Parents are also a critical component of the career awareness process. Industry Representatives all stated that it is imperative for parents to be a part of and supportive of the apprenticeship pathway. Best practices for parent involvement include activities that bring

parents into the apprenticeship site to educate them about the opportunity through open house tours or meetings held at the company. Each apprentice said that when presented with the facts, their parents viewed apprenticeship as an opportunity they wish they could have had and were in full support of their child taking advantage of it. Dispelling the four-year degree myth with parents is best done through local industry who can produce real-life data on their wages, accurate education requirements and opportunity for advancement. Though none of the parents in this study had achieved bachelor's degrees, all of them had impressed upon their children the importance of achieving more education to create better opportunity. They held less rigid views of defining opportunity as a four-year pathway than their children, who admitted they were influenced by their peers and teachers. Goyette (2008) asserts in his research that as more parents have achieved bachelor's the degrees, the expectation has risen for their children to achieve the same level of education. The parents' education level in this study did not correlate to the students' willingness to enter an apprenticeship versus a four-year college program, but the research on parent career awareness does highlight the importance of educating parents about the potential of an apprenticeship pathway in supporting their children. All of the apprentices in the study are on a career pathway within in their company and have the opportunity to complete a four-year degree and be reimbursed by the company. Without full exposure to all of the opportunities in an apprenticeship pathway, parents fall short in understanding all of opportunities afforded their student. Therefore, programs that focus on parental awareness create an added layer of support for access and completion of the apprenticeship.

Career pathways are frequently cited in the research as a vehicle for productive work-based learning programming, a core component that promotes high rates of post-secondary

participation and completion among students (Hoachlander, 2008). Apprenticeship programs should convey to the apprentices an understanding that their apprenticeship is a pathway to a career, not just a job. The apprenticeship pathway is often ignored as critically important in elevating the relevance of work and testing out career choices (Symonds, Schwartz, & Ferguson, 2011). To create a successful program, apprenticeship pathways should be created that show students how they can move up to new positions in the company, increase their wages and continue their educational pursuits through certifications, credentials and degree programs. In this study, CDCs in collaboration with Industry Representatives at both high schools connected the student's Career and Technical Education training in high school to their work at the company, the associate's degree program they would be entering, and the salary they would be earning. They did this in several strategic ways that should be replicated and refined across the state to create programs that support and retain Black, male students: 1) CDCs used career assessments and questionnaires with students to determine if their academic abilities and skills aligned with the skills needed in the apprenticeable occupation being advertised by the company. This was supported by information about the monetary value of the apprenticeship, labor market data and career pathway information that showed wage progression, mobility within the company and the opportunity to receive further education. 2) Both schools partnered with the company to recruit students for a 3-4 night orientation where they could be observed using their skills in an applied setting and where they could see first-hand how their skills fit into different positions in the company. 3) All of the candidates chosen for the pre-apprenticeship program took community college coursework that would indicate their level of readiness for college-level work while exposing them to introductory industry-related concepts. These candidates also worked in various

areas of the companies so they could select a career pathway in an area that best fit their skill-sets. Programs that support the successful completion of Black, male apprentices should have a clear pathway that is presented to the student through intentional career awareness opportunities before, during, and after apprenticeship recruitment.

To ensure apprenticeship is seen and understood as a viable pathway into the workforce, programs should be connected to pathway implementation within North Carolina's local workforce development systems to streamline career awareness and work-based learning opportunities for high school students. Workforce boards in all 8 prosperity zones of North Carolina have worked to certify career pathways through the state by partnering with local industry, education, and community partners to meet specific criteria that will lead to a pipeline for high demand occupations. Achieving certification for a career pathway indicates the commitment made by all partners to reach potential pathway participants with information about how to enter the workforce in a particular industry sector. It includes locally generated marketing materials that show students the training and related education available, the continuum of certifications and degrees that can be earned and the opportunities that exist for work-based learning. Ryken (2006) found that the greatest impact for minority students is found in programs that connect student learning to a larger curriculum theme or visible pathway to employment. Apprenticeship opportunities that are developed and promoted within the state's pathway certification system will provide more support, validation, and vision for other Black, male students considering apprenticeship, while demonstrating the commitment of all local partners to apprenticeship opportunities.

Theme 2: Economic Mobility. Research studies have shown that work-based learning can have positive implications for employment rates and quality of life after high

school (Guy, Sitlington, Larsen & Frank, 2009). Case Western Reserve University and United States Department of Commerce (2016) cites evidence that apprenticeships in unskilled and semi-skilled occupations serve as an investment in human capital, yielding a profit for both the apprentice and the company over time. The apprentices in this study articulated that they were very aware of the investment the companies were making in them. They even recited numbers about their monetary worth to the company that reached over six figures for the length of the apprenticeship. All three apprentices attested that being treated as an investment made them feel like a valued employee and increased their awareness of their school and work performance. They also spoke to the tangible benefits of the investment that the company was making in them like being able to pay for their own cars and provide monetary support to their families. Creating a culture of investment in apprenticeship within companies is vital to the success of attracting and retaining these students.

Companies should engage to performing cost/benefit ratios on their apprenticeship programs to demonstrate the value they place not only on their investment in the apprentice, but also on the return from the apprentice. Apprentices respond to feeling valued. When this is demonstrated through fair, progressive wages and opportunity for promotion within the company, retention is likely to increase. Apprentices work harder for the company when they are paid fairly. Research indicates that successful apprenticeship programs offer workers compensation for occupation-specific training which provides a pathway into a career with higher earnings. Case Western Reserve University and United States Department of Commerce (2016) noted that the key to a company sustaining apprenticeship is to balance the interests of the employer and the apprentices by calculating the return on investment over time. The apprentices in this study were aware from the beginning that they were being

compensated for their acquisition of skills and knowledge and that their starting salaries as high school students would be well above that of their peers working part-time jobs. All of the companies participating in this study worked with a consortium to set the progressive wage for all of the apprentices in their local areas to equalize the competition. They also all agreed to pay students during the pre-apprenticeship phase for their time spent at the company and their community college seat time. This investment, all of the apprentices agreed, supported their recruitment into the pathway and sustained their desire to complete the program. Upon completing the apprenticeship, all of the apprentices already had years of experience with the company and were being paid based on that experience. They all stated that they were interested in apprenticeship because of the opportunity to create a better life than the one their parents were able to provide. These apprentices concluded in their interviews that free education and wage increases benefitted them by improving their economic mobility. For apprenticeship to become a competitive post-secondary pathway, completion rates must highly correlate to the investment the company makes in the apprentice and elevate the perception of improved economic mobility for the participant.

Theme 3: Wrap-Around Supportive Services. In accordance with Bailey (1993), the apprenticeship movement breaks down conceptions of learning vs. work, academic vs. vocational, and college-bound vs. non-college bound. It facilitates a reciprocal relationship between school and employers. Hoachlander (2008) found that, when structured appropriately, students who participate in work-based learning programs have lower drop-out rates and higher college enrollment and graduation rates than their peers. The research in this study found the structure of the three apprenticeship programs to be built on a strong, intentional and collaborative support network that included the apprentices, their parents, the

CDC, and an Industry Representative dedicated to the apprentice. Foran (2015) states that people who are committed to the mission (access and equity for marginalized students) are of greater importance than even the development of the program itself. Industries should consider identifying personnel who interact with the apprentices from recruitment to completion of the program to provide continuity and strengthen relationships with the apprentices. These staff members should be empowered to seek potential apprentices who possess the attributes that are conducive for success in the company.

In this study, the support process started with potential apprentices who demonstrated self-efficacy and positive social interactions that were recognized by the industry representatives. All of the apprentices in the study made good grades, believed that they could be successful, and were confident once they could see how their abilities aligned with the recruitment activities. They also had a keen understanding of the apprenticeship opportunity and how it fit their skill sets. Lerman (2009) posits that apprenticeship is an appealing way to integrate minorities, particularly men, into highly technical careers. Having learning take place mostly on the job with tasks that are highly relevant to their careers gives them increased confidence in their personal efforts. Black, male apprentices benefit from accomplishments that increase their self-efficacy, especially when skills they bring to the apprenticeship are recognized and utilized. Successful apprenticeship programs need a mechanism to identify and apply the personal qualities and talents of the apprenticeship candidates to measure potential and ensure a good fit. Apprentices themselves are the foundation of their own support network, and they must be in touch with their internal drivers and occupational identity to push forward through difficult circumstances to succeed.

Dauber, Alexander, and Entwisle (1999) posit that students' performance and their outlook on successful participation in a work-based learning program is influenced by both socioeconomics and family background. Each parent in this study was part of a career awareness program aimed to educate them about the opportunity for their child in an apprenticeship. All of these parents also used supportive language with their child concerning the option to choose an apprenticeship pathway. The apprentices reported that their parents affirmed their post-secondary choice and articulated their support. For Black, male apprentices to be most successful, they need support to be spoken in the home. Parents and guardians must be given opportunities to invest in the apprenticeship process by attending open houses, signing ceremonies and interest meetings. Additionally, parents must invest in their apprentices by educating themselves about the opportunity, providing positive, supportive feedback and by addressing transportation needs for attending work and college. Parents must be viewed by both the school and business community as a regarded partner integral to the support process demonstrated by inclusive partnering during the recruitment and completion phases. Apprenticeship programs in which parents are included as a vital part of the support network and who invest in the process substantially contribute to increased access and completion of Black, male participants.

Dynamic high school career development coordinators are another crucial component of wrap-around support services. They serve as a conduit between the students, parents and the industry. Studies have indicated that expanding opportunities for low-income and minority students in work-based learning programs require a comprehensive effort in supporting the individual (Symonds, Schwartz, & Ferguson 2011). Kitchenham (2008) asserts that for education to be empowering, there should be a transformative relationship

that occurs between teacher and student, student and learning, and learning and society. The relationship that the CDC forms with each apprentice should scaffold how he approaches his learning and interactions with the company. In programs with high rates of Black, male participation and completion, companies cultivate a close relationship with the CDC. Companies should provide support to the CDC in the recruitment process through educator awareness, creation of marketing materials and the development partnerships for career development activities. Likewise, training for CDCs specific to connecting data to apprenticeship pathways should be developed along with best practices for working with youth from diverse populations.

In working with Black, male apprentices, CDCs should serve as a resource and mentor throughout the experience. CDCs who invest in apprentices after the K-12 experience, continuing to mentor and support them greatly impacts the success of the apprentice. They also create a positive culture around apprenticeship at their schools. During their time in high school, it is imperative that CDCs spend a great deal of time talking to, listening to and getting to know apprentices to help the company or college provide appropriate supports. CDCs who want to be successful in recruiting Black, male apprentices into the program, should utilize their relationship with the apprentices to bring them into the support system by offering them opportunities to work with other youth at the high school. Black, male apprentices benefit from CDCs who fill in the gaps and who are the central figure in connecting the other components of the support network.

Industry partners must also be seen as a source of support to the Black, male apprentice, not just an employer. Bill Reese, President and CEO of International Youth Foundation states in his report *Opportunity for Action* that industry leaders must make a

dramatically greater investment in today's young people through their marketing and training programs. As Black, male youth continue to fall behind all other subgroups in apprenticeship participation and completion, the perceived human capital of Black workers has received little attention in the research (Gradin, 2010). It is for this reason that industry support for Black, male apprentices within the company and through collaboration with outside stakeholders is another important component in the wrap-around support structure. When asked about their success in producing Black, male apprenticeship completers, all of the industry representatives in the study referred back to the human capital of the apprentices and described their soft skills, willingness to learn, math skills and ability to work with their hands as assets. Industries should invest in a recruitment process that is thorough and gives the Black, male applicant a forum to demonstrate his skill-set rather than relying on application criteria alone. Another characteristic of each of the industries is that someone was designated as the go-to person for the apprentices in addition to overseeing their training. In all three cases, the industry representative who came to their high school to recruit, interacted with them throughout the pre-apprenticeship and apprenticeship process. These same representatives worked with the parents, high school CDC and shop floor mentors to keep communication open. Industries seeking high recruitment and retention rates in their apprenticeship programs should invest in hiring or training company representatives whose role is to build relationships with recruits, parents, educators and apprentices. They should be prepared to leverage stakeholder groups and resources to ensure the success of the apprentice. The apprentices in this study noted that industry representatives offered them tutoring and study time along with frequent check-ins to assess how they were doing emotionally. All of the apprentices acknowledged that the industry representative was a

major source of support while at the company. Callan (2008) states that industry can do many smart things in design and delivery, but implementation still comes down to the employer's attitude toward apprenticeship. For apprenticeship programs to find success in attracting and sustaining Black, male youth they must create an environment where apprentices are viewed as an investment and treated accordingly. Successful programs dedicate training dollars to staff who are available to mentor and support the apprentice throughout the process.

Issues with participation and completion of work-based learning programs by minority populations is often a result of isolation in the workplace setting (Johnson, 2001). Daviso and Textor (2013) posit that students learning in an industrial environment do not have the peer support they had in the large, traditional classroom requiring more support to overcome issues of engagement. All of the industries in this study are part of a local consortium of industry partners who recruited together to leverage the community college for customized blocks of instruction for apprenticeship participants in a cohort, giving the apprentices an extra layer of peer support in their college coursework. Local areas who are working to retain Black, male apprentices should consider a consortium model of recruitment for related education to encourage collaboration among apprentices and decrease attrition due to isolation. The apprentices in this study each attributed their cohort members as being an integral part of their success. They relied on each other for emotional support, transportation and academic help while vying for the apprenticeship slots during the orientation and pre-apprenticeship. All of the apprentices described their cohort members as friends and stated that having people around them who were going through the same experience was huge to their success. In a 2012 study of 89 low socioeconomic, minority students, Shuette, Ponton and Charleton found that fear of estrangement from their community and risk of failure

lowered career aspirations in work-based learning programs for marginalized students. Industries, like those in this study, should implement two approaches to alleviate this barrier: a diverse workforce and a plan for the apprentices to give back to their communities. First, many nationalities, ethnicities and races were visible on the shop floors of the companies in this study. Apprentices thrive in a work environment where they can identify people who look like them and share similar backgrounds. Additionally, successful apprentices are part of a wrap-around support structure that includes their willingness to serve and support other students engaging in the apprenticeship process. In this study, all of the apprentices remained in contact with their local communities through recruitment programs at their high schools, deepening their commitment to the apprenticeship.

Addressing the Gaps

Work-based learning initiatives in the United States have been in a refining process over the past decade. With implementation practices varying from state to state and lack of a definitive work-based learning model in place, research specific to the conditions that support Black, male youth participation and completion are not evident in the literature. In North Carolina, the adoption and implementation of Harvard's Pathways to Prosperity Framework by the Department of Public Instruction, the Community College System and the Department of Commerce six years ago created a unique infrastructure, rich in data with stories of successful Black, male youth participation. This study captured those stories. The findings in this study uncovered that apprenticeship programs in several areas of the state engage in practices that improve recruitment and retention of Black, male youth. As a result, the three youth apprenticeship programs studied in North Carolina yielded specific work-based learning practices that support access and completion of Black, male participants.

Unlike the methods of previous studies on marginalized groups that utilized surveys and demographic data yielding generalized information about the engagement of the participants, this study produced, in detail, specific data from the words and experiences of Black, male participants. The experiences of these apprentices can be replicated and implemented with other demographic groups. The rationale for this research was to move forward the work of Bennett (2007) and Symonds, Schwartz, and Ferguson (2011), who focused on the barriers of minority and low-socioeconomic groups by focusing on the positive experiences of a specific group. This research reframed the topic with a new focus on conditions that promote successful work-based learning experiences for Black males in an apprenticeship setting. The multi-case study approach produced themes gleaned from the experiences of all the participants that could be used to create best practices for implementing work-based learning programs like apprenticeships that support Black male access and retention.

Limitations

Reed et al. (2012) statistics on Black, male participation in apprenticeships reported rates of around 13% across the country. This percentage accounted for the total number of participants, which also included adult males who did not fit the criteria of this study. Therefore, the number of Black, male youth entering apprenticeships through a Career and Technical Education pathway is unknown, especially since the programs in North Carolina are unique to the state. Finding participants in North Carolina who entered and completed an apprenticeship through a pre-apprenticeship program was difficult due to the age of the programs and the fact that this population is already underrepresented. Another limitation of the study is that the roles of stakeholders from the community college, workforce

development boards, community agencies and schools' counseling programs were not evidenced in the stories of the lived experiences of the participants. The scope of this study was to capture the lived experiences of the apprentices and correlate their stories to the support structures that they identified in the program. The aforementioned stakeholder groups, though not part of the participants' data, do play roles in the apprenticeship programs in which they participated. Their roles were not captured from the data in this study, leaving their work unknown to the success of the apprentice.

The apprentices selected in this study also created a limitation due to their roles as marketers of the program, promoting the apprenticeship for the consortium and their company. Each of the participants was transformed by the experience and have a positive view of apprenticeship that they feel compelled to share with others who may have come from similar backgrounds. Part of their role at the company is to recruit more apprentices and industries into apprenticeship by doing panels, interviews, newspaper articles and recruitment fairs. The apprentices in this study may have only brought up the positive parts of the experience as they are familiar with speaking with the public about the benefits of apprenticeship. Because the apprentices only interacted with the researcher once or twice by phone and once in a 60-minute interview, they may not have established a rapport conducive to opening up about negative experiences.

The role of race was also a limitation of the study. The researcher being a white, middle-aged female; and the participants, all young, Black males; could have contributed to the omission of racial inequality as a barrier or factor that affected the apprentices. All of the apprentices denied exclusion due to race or feeling that race was a major issue on the shop floor. Apprentice 2 was careful to say, "I don't want to get into the color of skin part of it, but

there was a slight hesitation for a couple of them. But once they saw I had the drive and some knowledge right off the bat, I picked things up, then like, 'Oh, you're kinda like the rest of us. That's a shocker.'" Likewise, each of the other apprentices when asked how they were treated on the shop floor diverted the question by talking about their relationship to other workers in terms of age or work ethic. Apprentice 2 said, "It seemed like everybody there was old enough to be my dad or possibly even grandfather. So, it was just learning how to deal with ... they talk differently, they think differently. Most of the time they look different, as well. But, at the same time it's just like them realizing, 'Hey, we're all in here…We have the same goals.'" The researcher's race may have prevented full disclosure about the racial dynamics occurring at the work sites.

Macro and Micro Theories in the Research

Merriam and Tisdell (2016) state that all aspects and processes of a research study are affected by its theoretical framework. A macro-level theory looks at the large-scale social processes occurring outside of the participant as he interacts with the environment. A micro-level theory is concerned with those interactions occurring at the individual level and within. In this research, Social Constructionist Theory at the macro-level and Transformative Learning Theory at the micro-level are the theoretical frameworks that support the research and the outcomes in the study. These theories were chosen to frame the propositions about the external forces acting on the apprentices and the internal changes that occurred during the apprenticeship process.

Revisiting Social Constructionist Theory

Higher levels of educational attainment are believed to be an entry into higher status and higher paying professions despite a mismatch with the available jobs in the U.S. This,

according to Goyette (2008), has resulted in an entrenchment in the "college for all" norm. Students are increasingly less likely to associate a bachelor's degree with socioeconomic background, but more a rite of passage for all youth. This creates the foundation for Social Constructionist Theory, the macro theory, that guides this research. Gergen (1985) states that a great deal of human life exists as it does due to social and interpersonal influences. Social Constructionism focuses on the social influences on communal and individual life. It is principally concerned with explaining the processes by which people come to understand or account for the world in which they live and the communal agreements they make around acceptability. Each apprentice described a commonly held belief that four-year college was the most acceptable option for their post-secondary education, with very little information about how their interests and abilities aligned with a major that would lead to a career. All of the apprentices initially considered a four-year college pathway during their post-secondary planning, citing their peers as major influencers in the decision. Apprentices 1 and 3 said that even though they had no idea how they would pay for college, they knew they were interested in engineering and dismissed the idea of the apprenticeship because they understood the four-year degree to be the only acceptable way to enter the field. In accordance with Gergen (1985), it is of specific importance to challenge current paradigms that have been sustained across time due to assumptions that are dependent on the changes of social processes like communication, negotiation, conflict and rhetoric (Gergen, 1985). The three themes that emerged in the research--Career Awareness, Economic Mobility and Wrap-around Supportive Services--challenged the current paradigm of the four-year college going culture. These challenges to the status quo are evidenced through the lived experiences of the

participants and the changes in social processes that occurred. They are also visible in Gergen's remaining assumptions of Social Constructionist Theory.

Assumption 1. An individual's understanding about their experience of the world does not in itself dictate the terms by which the world is understood. Knowledge of the world is complex because theoretical propositions of knowledge are made up of a network of other propositions that can be challenged when any part is disproven (Gergen, 1985). This was revealed in Theme 1: Career Awareness through the programs the CDCs and industries built to respond to social constructions in the educational system about post-secondary success. They developed robust career awareness opportunities with new knowledge that would shift paradigms in their school communities. As stated by CDC 2,3 the goal of his program was to teach the students to use actual labor market data to help them understand the validity of a variety of pathways that lead to success and to teach them to understand that it is not about how much education they get, but what kind. CDC 2,3 challenged propositions of knowledge with the apprentices through a change in rhetoric as he explained, "You don't know what machinist even means. But I'm gonna go out and be able to show you...So, we encourage him to become aware. Informed. Become exposed…I'm gonna tell you it's okay to go to the community college. That this is a valid pathway." Evidence of Gergen's assumption was found in the responses of the participants. Apprentice 3 stated, "There was definitely structure and push from the school to go and try to move students towards this path. One of the other things that was mentioned is just if you have your two-year degree, you can make more money than a person who's still in school still working on their four-year degree. I started to take it more serious." He commented further on the information communicated to him by the CDC, "I trusted his guidance. I mean he was experienced. He'd been in business

for a long time. He always backed up everything that he said with research, the statistics, facts." Likewise, industry partners approached career awareness activities that were based on real-world information. They presented data and ideas that would change parents,' educators' and students' constructs about their industry and the apprenticeship by providing career exposure to career pathways through company tours, school presentations, and the development of data and career pathway oriented marketing materials. Apprentice 1 demonstrated his shift in thinking about an apprenticeship when he stated, "The apprenticeship… it's taking me down the same path that I initially wanted, so it's building on, and it's gonna put me higher up once I do get there." Industry Representative 1 recalled how Apprentice 1's mother and aunt were highly engaged in industry tours asking many questions. Apprentice 1 explained that ultimately it was his family who "liked what they heard" and influenced his decision to choose an apprenticeship. In accordance with Gergen (1985), this new rhetoric in the approaches to career awareness challenged propositions about four-year pathways by disproving commonly held beliefs about post-secondary success.

Assumption 2. A second assumption brought forth by Gergen (1985) is that the terms in which the world is understood are social artifacts, products of historically situated interchanges among people. From the constructionist position, the process of understanding the world is the result of an active coordination of people's ideas and relationship with history and culture that undergo significant changes over time. This assumption was realized in Theme 3: Wrap-around Supportive Services. Data in the study revealed that the active coordination and communication of new ideas among multiple stakeholders facilitated strong support for the apprentices, making them feel successful and ultimately impacting their decisions. Apprentice 3 said, "Your support system, you have to have a support system--

people inside the company who care about you and want you to succeed, people that serve as mentors outside the company to go and help you develop your professional and personal skills, definitely help from the family-filling in whatever cracks and whatever it is that we need to go and get through." The interchanges among people that Gergen writes about has taken place in this research during a time when the idea that all students should prepare to go to college has led to little job advice or preparation, resulting in unachievable post-secondary plans (Olinsky & Ayers, 2013). The active coordination of these stakeholders to communicate support of apprenticeship began a new process through which the apprentices were able to see and trust the new options before them. As stated by Industry Representative 3, their apprenticeship program developed around a talent gap that emerged in the industry for machinists. Once IR 3 recognized apprenticeship as a viable program for recruiting young talent she had to sell the idea to management at her company. Industries then shared the information with the schools and employed their help to support the pathway. Industries and schools collaborated to share apprenticeship information with parents instead of students only, further increasing the number of interchanges among stakeholders. The result is what Gergen (1985) describes as coordination of ideas that changed how the stakeholders viewed apprenticeship as pathway to post-secondary success.

Assumption 3. The final assumption presented by Gergen (1985) is that forms of negotiated understanding are of critical significance in social life because they are integrally connected with many other activities in which people engage. How the world is described and explained institutes what people do and the actions they take (Gergen, 1985). In this research, the data showed that post-secondary decision-making was tightly coupled with economic mobility for the apprentices. Theme 2: Economic Mobility was evidenced in

Gergen's assumption through the negotiations the apprentices made in rejecting a four-year degree pathway and moving forward in an apprenticeship that contradicted the social construct of post-secondary success among their peers. Industry Representative 1 said of his apprentice, "He was a very bright young man. He was willing to work and figure out a way to make it (apprenticeship) happen because he saw what it could do for him, and he saw what it could do for his family. He just stuck with it." This was echoed by Apprentice 2 who stated, "This opportunity was bigger than me and it's impacted me greatly. Learning about it opened my eyes to more career paths than what I thought I would be capable of. I know it would benefit my family if they need it." He went on to say, "My parents told me, 'You're given a wooden spoon, it's up to you to make it a silver spoon at the end of your life.' You're gonna eat with that wooden spoon for as long as you want, but if you want to make it to that silver spoon, you gotta do what you gotta do, and that's what I did." The description of the benefits of the apprenticeship program led by the CDCs and the industry representatives was integral to the decision the apprentices made because it directly affected their personal lives. All of the apprentices said they were eager to make a better life for themselves and that learning about the advantages of an apprenticeship aligned with their overall goals for the future. Apprentice 3 said, "(Where I live) is probably like the second worst in terms of moving to a higher social economic status than you were born into. So, my family wasn't poor but at the same time we weren't really well off either. I feel like slowly but surely, I'm helping raise us out of that." Gergen (1985) posits that these new forms of understanding are critically important because they instituted the actions the apprentices took toward their post-secondary pursuits.

Table 1.

Emerging Themes with Supporting Social Constructionist Data

Theme	Social Constructionist Theory	Keywords	Data	Results
Theme 1: Career Awareness	Knowledge of the world is complex: theoretical propositions of knowledge are made up of a network of other propositions that can be challenged when any part is disproven (Gergen, 1985)	Rhetoric challenge disprove	1) "I'm gonna tell you it's okay to go to the community college. That this is a valid pathway." 2) "There was definitely structure and push from the school to go and try to move students towards this path. One of the other things that was mentioned is just if you have your two-year degree, you can make more money than a person who's still in school still working on their four-year degree. I started to take it more serious."	New rhetoric challenged old paradigms. Ideas about four-year pathways as the route to success were disproven. The apprentices chose apprenticeship over a four-year college
Theme 2: Economic Mobility	How the world is described and explained institutes what people do and the actions they take (Gergen, 1985)	Negotiation actions	1)"He was a very bright young man. He was willing to work and figure out a way to make it (apprenticeship) happen because he saw what it could do for him, and he saw what it could do for his family. He just stuck with it." 2)"This opportunity was bigger than me and it's impacted me greatly. Learning about it opened my eyes to more career paths than what I thought I would be capable of. I know it would benefit my family if they need it."	Once the opportunities of the apprenticeship opportunity were presented, the apprentices began to negotiate the benefits and the potential. Each of the apprentices acted on the chance to elevate their earning potential by entering into and completing the apprenticeship.
Theme 3: Wrap-around Supportive Services	Understanding the world is the result of an active coordination of people's ideas and relationship with history and culture that undergo significant changes over time (Gergen, 1985)	Communication coordination of ideas situational interchanges relationship with history	1)"Your support system, you have to have a support system-- people inside the company who care about you and want you to succeed, people that serve as mentors outside the company to go and help you develop your professional and personal skills, definitely help from the family-filling in whatever cracks and whatever it is that we need to go and get through."	The communication, coordination of ideas and interchanges around replacing old ideas about post-secondary success with ideas for new pathways supported the apprentices' decisions to pursue and complete an apprenticeship.

Revisiting Transformative Learning Theory

Transformative Learning Theory is the micro theory guiding the research. In accordance with Mezirow (2000), a more true and justified belief system begins to guide individual actions and create more capacity for inclusiveness, change and reflection. The stories of the lived experiences of the three apprentices revealed problematic frames of reference about choosing a post-secondary path that would lead them out of poverty. Without exception, each apprentice indicated that they hoped to build a more financially secure future for themselves and that their mindset about achieving this was driven by their perception that

a baccalaureate degree would be their golden ticket to success. The recruitment and completion of an apprenticeship program provided an opportunity for the participants to challenge their meaning perspective, or the structure of their past cultural and psychological assumptions, through contextual understanding, critical reflection of assumptions, and validation of the meaning of the experience (Mezirow, 2000). The research themes that emerged in this study were a result of these three transformative processes through which each of the apprentices assessed their own belief systems in order to assimilate and transform during the apprenticeship experience.

Contextual Understanding. In accordance with Mezirow (2000), there must be a constructive discourse around the sources, nature and consequences of habits of mind. The implications of contextual understanding among the apprentices were evidenced in Theme 1: Career Awareness. The information and opportunities that the participants in this study were exposed to challenged and often contradicted their habits of mind, specifically, what the apprentices believed about post-secondary success. Apprentice 1 stated, "I know a lot of things that I would not have known being a teenager just going through school and not being able to see what actually goes on in the workforce." This exposure to real-life after high school was based on fact sharing aimed at creating context and understanding for informed decision-making. As described by CDC 2,3, "We share with them that the millennials are the most educated generation in the history of the United States…But the problem gets to be that over 50% of those millennials, who have at least a four-year college degree today, they're unemployed or underemployed." He went onto explain, "Everything we do is based on three things: career and industry awareness, career and industry exploration, and then moving into intentional skill building." This was reinforced by recruitment strategies that Industry 2

described as, “very intense...very long. I’m on the factory floor gaging where they are, what their level of engagement is, soft skills, all of that kind of stuff.” Contextual understanding in Mezirow’s theory came to fruition in the research through intense career exposure that created new habits of mind. It transformed uncertain young men into confident professionals and changed their definition of success and vision for their futures.

Critical Reflection of Assumptions. The apprentices in this study were each initially skeptical of the benefits of the apprenticeship opportunity. Apprentice 2 stated, unequivocally, “I’m not doing this because nothing is free.” But, he, like the other apprentices in the study looked back over his experience to see the true value it brought. He later came to realize that he liked, “having a degree that’s fairly new,” and that, “most people my age are just graduating college, and have all of these student loans and this debt, not a nice vehicle.” Apprentice 3 concluded that, “My family wasn’t poor, but at the same time we weren’t really well-off either. I feel like slowly, but surely, I’m helping raise us out of that.” The critical reflection of assumptions in Mezirow’s theory aligned with Theme 2: Economic Mobility. In accordance with Mezirow (2000), transformative learning can occur from a powerful experience that changes the way people see themselves and their world. Apprentice 1 described that, “The major impact is having stability. Apprenticeship sets forth everything you would need to be successful.” Apprentice 2 described it as, “a huge sense of accomplishment.” Each of the industry representatives recognized the financial impact of the experience, noting that their apprentice was able to purchase his own transportation during the program. Apprentice 2 said that it was important to him that the apprenticeship experience afforded him the financial security to help his parents if they needed it. By all

accounts, the apprenticeship experience transformed the participants' beliefs about their circumstances from a position of dependency to that of self-reliance.

Validation of the Meaning of The Experience. Mezirow cites Freire who asserts that the opportunity to tell how and why an experience was a good or better choice for the participant creates the potential to transform old paradigms into new ways of thinking that can lead to empowerment. In this research, Theme 3: Wrap-around Supportive Services, aligns with Mezirow's concept of validating the meaning of the experience through the empowerment of the apprentices to join the support structure. CDC 1 and CDC 2,3 both spoke to the power of the apprentices to reach out to high school students as an authoritative source. CDC 1 described Apprentice 1 as "the company man" when he came to campus wearing his company issued polo. She described his confidence walking the halls and the respect he gained from the other students. Apprentice 1 became a spokesperson for his apprenticeship program. Having completed multiple interviews for newspapers and television, he stated that he wants to reach as many students and parents as he can with his story. CDC 2,3 explained, "All of our apprentices, they're gonna come back and talk to our kids. They become part of our overall awareness and exploration process." Apprentice 3 described the sense of responsibility he felt to future participants to perform well and to be a good role model. He also reflected that becoming an ambassador for the program developed skills and confidence in public speaking that he did not know existed. The apprentices have each become mentors to other people in the program and have had the opportunity to provide feedback to the company to change and improve the program. The data speaks to the insight they gained about themselves and their worth to the company through these opportunities. All of the apprentices stated that they recognized that they were an investment to the

company and that their input and skills were valued. Apprentice 2 spoke to the fact that when his mentor recognized what he could contribute that they began to learn from each other and the respect between them grew. The validation of their experiences by their high schools and their employers as contributing members of the support network has transformed them from passive recipients of an apprenticeship position to active contributors to an economic pipeline.

Table 2.

Emerging Themes with Transformative Learning Theory Supporting Data

Themes	Transformative Learning Theory	Keywords	Data	Results
Theme 1: Career Awareness	**Contextual Understanding** There must be a constructive discourse around the sources, nature and consequences of habits of mind (Mezirow, 2000).	Context exposure to real-life change	1) "I know a lot of things that I would not have known being a teenager just going through school and not being able to see what actually goes on in the workforce." 2) "I'm on the factory floor gaging where they are, what their level of engagement is, soft skills, all of that kind of stuff."	Contextual understanding transformed uncertain young men into confident professionals and changed their definition of success and vision for their futures.
Theme 2: Economic Mobility	**Critical Reflection of Assumptions** Transformative learning can occur from a powerful experience that changes the way people see themselves and their world (Mezirow, 2000).	Experience changes seeing yourself	1)"Most people my age are just graduating college, and have all of these student loans and this debt, not a nice vehicle." 2) My family wasn't poor, but at the same time we weren't really well-off either. I feel like slowly, but surely, I'm helping raise us out that."	Critical reflection of assumptions transformed the participants' beliefs about their circumstances from a position of dependency to that of self-reliance.
Theme 3: Wrap-around Supportive Services	**Validation of the Meaning of The Experience.** The opportunity to tell how and why an experience was a good or better choice for the participant creates the potential to transform old paradigms into new ways of thinking that can lead to empowerment. (Mezirow, 2000)	Transform paradigms new ways of thinking	1)He was "the company man" when he came to campus wearing his company issued polo. 2)"All of our apprentices, they're gonna come back and talk to our kids. They become part of our overall awareness and exploration process."	Validation of the meaning of the experience transformed them from passive recipients of an apprenticeship position to active contributors to an economic pipeline.

Implications

Policy. Apprenticeship is receiving increased national attention through policy aimed at creating an equitable workforce development system. The National Skills Coalition has been a catalyst in organization, advocacy and communications to advance state and federal policies that invest in people and ensure that every worker and industry has the skills to compete and prosper (National Skills Coalition, n.d.-a). They have brought together hundreds of leaders from the apprenticeship community, including industry associations and employers, unions and labor-management partnerships, community-based organizations, community colleges, high schools, workforce boards and policymakers to focus on critical challenges facing the expansion of apprenticeship in the U.S. that includes addressing equity issues and diversifying the apprenticeship pipeline. They have made policy recommendations to the Trump Administration, imploring Congress to pursue proposals that will expand apprenticeship for students and workers, and create new options for work-based learning strategies. Specific to the research in this study, they are asking: 1) To update the concept of pre-apprenticeship through an employment-friendly "work-based learning support fund" to prepare targeted students and workers for apprenticeship opportunities, and provide them and their employers additional assistance to help them stay on the job and complete their training, 2) To assist both in-school youth (through an improved Perkins Act) and out-of-school youth (through a better-implemented Workforce Innovation and Opportunity Act) with connections to the workforce to make it possible for young people to become an apprentice whether they are in high school, graduated, or have dropped out (National Skills Coalition, n.d.-b).

WIOA (Workforce Innovation and Opportunity Act) is landmark legislation that is designed to strengthen and improve the public workforce system and help get youth and

those with significant barriers to employment into high-quality jobs and careers and help employers hire and retain skilled workers. WIOA legislation includes several components specific to strengthening the resources and support for apprenticeship including requirements that state and local workforce boards must include a representative of an apprenticeship program. As the number of WIOA eligible participants increases in apprenticeship participation across the state, North Carolina is positioned to address the needs of underserved populations more effectively through formal relationships between apprenticeship programs and workforce boards who work with industries that sponsor apprenticeship programs. Currently, states are also required by WIOA to include registered apprenticeship programs on the Eligible Training Provider List qualifying them to receive federal workforce funding as pre-approved training providers. This requirement in WIOA allows the workforce system to use funds for related education and other apprenticeship costs for eligible participants. It provides for increased reimbursement rates for employers for on-the-job training that can be used to support apprenticeship programs, which incentivizes companies to use apprenticeship to recruit and retain qualified workers (ApprenticeshipUSA, n.d.). Additionally, WIOA supports apprenticeship as part of career pathways and a workforce strategy for youth. The law cites pre-apprenticeship activities and work-based learning as supported elements of youth programs providing assistance to businesses employing WIOA eligible youth like the participants in this study (ApprenticeshipUSA, n.d.).

In 2016, the U.S. Department of Labor released updated Equal Employment Opportunity (EEO) regulations for Registered Apprenticeship programs to help businesses tap into the workforce's full potential and open career pathways for a larger and more diverse

pool of workers including women, minorities, and individuals with disabilities. EEO legislation under Title VII of The Civil Rights Act of 1964 prohibited discrimination in pre-apprenticeship programs, apprentice selection, and training for journey workers, based on race, color, religion, sex or national origin. Recent changes were made to include disability, age, sexual orientation, and genetic information along with a set of common-sense strategies for outreach and retention to help employers increase workplace diversity (U.S. Department of Labor, n.d.-c). As evidenced in apprenticeship experiences outlined in this study, the updated EEO regulations are designed to open up apprenticeship to all workers by supporting strong partnerships among industry, labor, education, and workforce organizations in the design of apprenticeship programs that provide highly-skilled workers for businesses and career advancement and good pay for workers. The implications for apprenticeship sponsors set forth include the affirmative action efforts sponsors must take to ensure equal opportunity for apprentices and applicants for apprenticeship. Like the Industry Representatives in this study, companies must designate an individual or individuals with appropriate authority, such as an apprenticeship coordinator, to be responsible and accountable for overseeing the commitment to equal opportunity in registered apprenticeship, including the development and implementation of an affirmative action program. The designee must have the resources and support of their leadership to ensure effective implementation that includes: 1) Monitoring all registered apprenticeship activity to ensure compliance with the nondiscrimination and affirmative action obligations, 2) Maintaining records, 3) Generating reports required by the registration agency, and 4) Disseminating information about equal opportunity and the apprenticeship program. Perhaps the most important policy implication generated by the results of this research are the new EEO regulations for affirmative action

that apply to companies with five or more apprentices. These sponsors must develop and maintain a written affirmative action program that includes the following: 1) Utilization analysis for race, sex, and ethnicity, 2) Establishment of utilization goals for race, sex, and ethnicity, 3) Utilization goals for individuals with disabilities, 4) Targeted outreach, recruitment, and retention of marginalized populations (U.S. Department of Labor, n.d.-c). The themes presented in this research on Black, male apprenticeship can help address the implementation of both WIOA and EEO policy.

Practice. The study of apprenticeship and Black, male youth participants and their lived experiences frames issues of recruitment and retention for educators in multiple ways. Studies have indicated that expanding opportunities for low-income and minority students requires a comprehensive effort to support individual students through multiple pathways (Symonds, Schwartz, & Ferguson, 2011). Educators must begin to respond to research and policy related to Career and Technical Education funding through Perkins reauthorization in 2012 by reframing how they think about post-secondary success and issues and the worth of non-baccalaureate programs. They need to consider Gergen (1985) who states that one's individual perspective does not define the view of the world. A requirement of Perkins funding is to provide students with strong experience in and an understanding of all aspects of an industry, which may include work-based learning experiences. The findings in this research support the development of career awareness activities that include authentic data and experiences and align students' abilities and desires with their post-secondary decisions. Educators should become aware of the benefits apprenticeship creates for Black, male students around economic mobility instead of holding on to advising philosophies and programs that continue to be one-sided and support the four-year "college for all" mantra.

Because knowledge is often derived from a perspective that serves the interest of some and not others, it is important to ensure that a student's decision-making is the result of accurate and factual information about post-secondary and career options and that educators affirm and support alternate career pathways in their ideology, programming and policy implementation. When educators reassess the way they orient their perceptions, knowledge, beliefs, and feelings they are better equipped to collaborate with other stakeholders to embrace their role in expanding opportunities for students. In accordance with new WIOA and EEO policy, educators must work with industry and other partners to develop apprenticeship pathways that create wrap-around services for marginalized participants. Work-based learning programs must be a collaborative partnership between apprentices, parents, schools and industries. The development of a strong, deliberate network of support as evidenced in the consortium models in this research can decrease the further marginalization of students who are often unintentionally set up for failure after high school. Consortium models effectively address policy by utilizing multiple partnerships and providing a continuum of support services. Moreover, for education to be empowering, there should be a transformative relationship that occurs between teacher and student, student and learning, and student and society (Kitchenham, 2008).

Recommendations for Future Research

Symonds, Schwartz, and Ferguson (2011) state that families of low socioeconomic status receive little or no critical social network resources that would help them transition their young adult children into viable post-secondary pathways. In this study, however, the themes that emerged provide new avenues for research into how to best support students from underrepresented backgrounds in apprenticeships. A deeper look at career awareness

programs and the role of the career development coordinator in apprenticeship recruitment and retention could provide best practice strategies for replication across programs. Additionally, future qualitative research on the families of successful Black, male apprentices would be a viable research topic as there is no research in the literature about family paradigms and apprenticeship completion. A deeper look at how cohorts developed by a local consortium impact the apprenticeship pipeline would help improve expansion of the model across the state. Additionally, researching the role of the local community college in supporting students like the apprentices in this study in completing their related education would be a timely topic for research in North Carolina. In November of 2017, the North Carolina Community College System became the accrediting agency in the state for registered apprenticeship programs. An integral part of the 2011 Pathways to Prosperity model used to develop economic development programs in the state, research on the community college's role could bolster the concept of wrap-around services that benefitted the Black, male apprentices not visible in this study. The connection of apprenticeship to the state's certified pathway system could also highlight how multiple agencies, like the ones participating in this study, work together to strengthen workforce development outcomes in local areas. Finally, with new requirements from the EEO around the inclusion of more diverse groups in apprenticeship participation, this study could be conducted with different populations including women or people with disabilities to broaden the approaches used to attract and support underserved populations in apprenticeship programs.

Personal Statement and Closing Remarks

This multi-case study of three Black, male youth apprentices was performed to understand their lived experiences as high school apprentices in programs in North Carolina.

I am optimistic that the themes that emerged in the study around career awareness, economic mobility and wrap-around support services will serve to improve the development of current and future apprenticeship programs that support the recruitment and persistence of Black, male participants.

References

Anderson, L. (2015). Targeted programs and career pathways within work-based learning policies. *ECS Education Policy Analysis.* Retrieved from https://files.eric.ed.gov/fulltext/ED556036.pdf

ApprenticeshipUSA. (n.d.). *The workforce innovation and opportunity act: Advancing apprenticeship as a workforce strategy*. Retrieved from apprenticeship/docs/WIOA-RA-Fact-Sheet.pdf)

Bailey, T. (1993). *Discretionary effort and the organization of work: Employee participation and work reform since Hawthorne*. New York: Teachers College and Conservation of Human Resources, Columbia University.

Beal, S. J., & Crockett, L. J. (2013). Adolescents' occupational and educational goals: A test of reciprocal relations. *Journal of Applied Developmental Psychology*, *34,* 219-229. doi:10.1016/j.appdev.2013.04.005

Bennett, J. (2007). Work-based learning and social support: Relative influences on high school seniors' occupation engagement orientation. *Career & Technical Education Research, 32*(3), 187-214.

Brand, B. (2003, April). *Rigor and relevance: A new vision for career and technical education. A white paper*. Washington DC: American Youth Policy Forum, Publications Department.

Calland, V. (2008). *Accelerated apprenticeships: Apprentice, employer and teaching staff perceptions.* Adelaide, Australia: National Centre for Vocational Education Research.

Canadian Apprenticeship Forum. (2006). *Return on apprenticeship training investment for employers: A study of 15 trades.* Retrieved from http://www.caf-fca.org/files/access/Return_On_Training_Investment-Employers_report.pdf

Case Western Reserve University & United States Department of Commerce. (2016). *The benefits and costs of apprenticeship.* Retrieved from Economics and Statistics Administration: http://esa.doc.gov/sites/default/files/the-benefits-and-costs-of-apprenticeships-a-business-perspective.pdf

Cease-Cook, J., Fowler, C., & Test, D. (2015). Strategies for creating work-based learning experiences in schools for secondary students with disabilities. *Teaching Exceptional Children, 47*(6), 352-358.

Creswell, J.W. (2007). *Qualitative research and design*. Thousand Oaks, California: Sage.

Crosby, O. (2002). *Apprenticeships: Career training, credentials, and a paycheck in your pocket*. Washington, DC: Government Printing Office.

Dauber, S.L., Alexander, K.L., & Entwisle, D.R., (1996). Tracking and transitions through the middle grades: Channeling educational trajectories. *Sociology of Education, 69,* 290-307.

Daviso, R. L., & Textor, A. (2013). Modifications and accommodations for students with disabilities in vocational education programs. *International Journal of Vocational Education & Training, 21*(2), 45-57.

Deloitte, Oracle, & The Manufacturing Institute. (2009). *People and profitability: A time for change.* Retrieved from Deloitte Consulting LLP: https://www2.deloitte.com/content/dam/Deloitte/pt/Documents/manufacturing/pt(en)_dc_peopleprofitability_05112009.pdf

Department for Innovation, University and Skills, & Department for Children, Schools and Families. (2008). *World-class apprenticeships: Unlocking talent, building skills for all.* Retrieved from National Centre for Vocational Education Research http://hdl.voced.edu.au/10707/70053

Elbaum, B. (2008). Why apprenticeship persisted in Britain but not in the United States. *The Journal of Economic History. 49*(2), 337-349.

Foran, M. (2015). Creating opportunity for struggling students. *The Education Digest, 81*(2), 4-11.

Gergen, K.J. (1985). The social constructionist movement in modern psychology. *American Psychologist, 40*(3), 266-275.

Gordon, H.R. (2014). *The history and growth of career and technical education in America.* Long Grove, Illinios: Waveland Press.

Goyette, K.A. (2008). College for some to college for all: Social background, occupational expectations, and educational expectations over time. *Social Science Research*, 37, 461–484.

Gradin, C. (2010). Conditional occupation segregation of minorities in the U.S. *Society for the Study of Economic Equality.* Retrieved from www.ecineq.org

Guy, B. A., Sitlington, P. L., Larsen, M. D., & Frank, A. R. (2009). What are high schools offering as preparation for employment? *Career Development for Exceptional Individuals, 32*(1), 30-41.

Hall, C.W. (1973). *Black vocational technical and industrial arts education: Development and history.* Chicago: American Technical Society.

Hinman, B. (2005). *A stranger in my own house: The story of W.E.B. Du Bois.* Greensboro, NC: Morgan Reynolds.

Hoachlander, G. (2008). Bringing industry to classroom. *Educational Leadership,* 65, 22-27.

Hoffman, N., & Schwartz, R. (2015). *Gold Standard: The swiss vocational education and training system.* Washington, DC: National Center on Education and the Economy.

Hollenbeck, K., & Huang, W.J. (2006). *Net impact and benefit-cost estimates of the workforce development system in Washington state*. (UI Report No. TR06-020). Retrieved from http://www.wtb.wa.gov/documents/netimpact2006.pdf

Holzer, H.J., & Lerman R., (2014). Work-based learning to expand jobs and occupational qualifications for youth. *Challenge, 57*(4), 18-31. doi: 0.2753/0577-5132570402

Howze, P. (2015). *American apprenticeship as a transformative learning experience: A phenomenology* (Unpublished doctoral dissertation). North Carolina State University, Raleigh, NC.

International Youth Foundation. (2012). *Opportunity for action: preparing youth for 21st century livelihoods.* Retrieved from www.iyfnet.org

Johnson, D. (2001). The opportunities, benefits and barriers to the introduction of work-based learning in higher education. *Innovations in Education & Teaching International, 38*(4), 364-368.

Kasl, E., & Elias, D. (2000) “Creating new habits of mind in small groups.” In J. Mezirow and Associates (eds.), *Learning as transformation*, 229-252. San Francisco, California: Jossey-Bass.

Kitchenham, A. (2008). The evolution of John Mezirow’s transformative learning theory. *Journal of Transformative Education, 6*(2), 104-123.

LaRose, C. (2015). The north east regional employment and training association takes a look at the new public workforce system under wioa. *Career Planning and Adult Development Journal, 31*(3), 59.

Learning and Skills Council. (2009). *Addressing inequality in apprenticeships: Learners’ views*. Retrieved from Learning and Skills Council: http://dera.ioe.ac.uk/166/1/nat-aiialearnerviews-feb09.pdf

Lerman, R. I. (2009). *Training tomorrow’s workforce: Community college and apprenticeship as collaborative routes to rewarding careers*. Retrieved from Center for American Progress: https://www.urban.org/sites/default/files/publication /27996/1001360-Training-Tomorrow-s-Workforce.PDF

Lerman, R.I. (2016, June). *Panel Paper: Apprenticeship Systems and Inequality: Country Differences and a US Simulation*. Paper presented at the Clement House, London School of Economics, London, England.

Lerman, R. I., & Rauner, F. (2012). Apprenticeship in the United States. In *Work and Education in America* (pp. 175-193). Dordrecht: Springer.

Maurizi, A. (1972). Minority membership in apprenticeship programs in the construction trades. *ILR Review, 25*(2), 200-206.

McKinsey & Company. (2009). *The economic impact of the achievement gap in America's schools*. Retrieved from Social Sector Office: http://www.p12.nysed.gov/ accountability/AOC/ resources/articles/achievement_gap_report.pdf

Merriam, S. B., & Tisdell, E. J. (2016). *Qualitative research: A guide to design and implementation*. San Francisco, California: John Wiley & Sons.

Mezirow, J. (1985). A critical theory of self-directed learning. In S. Brookfield (Ed.), *Self-directed learning: From theory to practice* (New Directions for Continuing Education, 25, 17-30). San Francisco, California: Jossey-Bass.

Mezirow, J. (2000). *Learning as transformation: Critical perspectives on a theory in progress. The Jossey-Bass higher and adult education series*. San Francisco, Callifornia: Jossey-Bass.

Moustakas, C. (1994). *Phenomenological research methods.* Thousand Oaks, California: Sage Publications.

Nall, H. (1997). Vocational education and the African American experience: An historical and philosophical perspective. *Journal of Intergroup Relations, 24*(3), 26-48.

National Skills Coalition. (n.d.-a). *About us.* Retrieved from https://www.nationalskillscoalition.org/about

National Skills Coalition. (n.d.-b). *Federal policy: Workforce innovation and opportunity act.* Retrieved from https://www.nationalskillscoalition.org/federal-policy/workforce-investment-act

Olinsky, B., & Ayers, S. (2013). *Training for success*. Retrieved from Center for American Progress: https://www.americanprogress.org/wp-content/uploads/2013/11/apprenticeship_report2.pdf

Ou, S., & Reynolds, A.J., (2014). Early determinants of post-secondary education participation and degree attainment: Findings from an inner-city minority cohort. *Education and Urban Society, 46(*4), 474-504.

Rainbird, H. (2000). Skilling the unskilled: Access to work-based learning and lifelong learning Agenda. *Journal of Education and Work, (13)*2, 183-197.

Reed, D., Yung-Hsu Liu, A., Klienman, R., Mastri, A., Reed, D., Sartar, S., & Zieglar, J. (2012). *An effectiveness assessment and cost-benefit analysis of registered apprenticeship in 10 States.* Retrieved from Mathematica Policy Research: https://wdr.doleta.gov/research/FullText_Documents/ETAOP_2012_10.pdf

Rice, O., Hudson, J., Foster, L., & Klein, S. (2016*). Connecting secondary career and technical education and registered apprenticeship: A profile of six state systems.* Washington, D.C.: U.S. Department of Education, Office of Career, Technical, and Adult Education. Retrieved from http://cte.ed.gov.

Richard, E., Clark, R., & Welch, S. (2011). An analysis of program issues perceived by cooperative education coordinators in Pennsylvania secondary schools and career and technology centers. *Career & Technical Education Research, 36*(2), 81-103.

Ryken, A. E. (2006). "Goin' Somewhere": How career technical education programs support and constrain urban youths' career decision-making. *Career & Technical Education Research, 31*(1), 49-71.

Sanderson, M. (1967), Education and the factory in industrial Lancashire, 1780-1840. *The Economic History Review, (20),* 266–279. doi:10.1111/j.1468-0289.1967.tb00136.x

Shuette, C., Ponton, M. K., & Charlton, M. L. (2012). Middle school children's career aspirations: Relationship to adult occupations and gender. *Career Development Quarterly, 60*(1), 36-46.

Schulz, K., & Peterson, K. (2016, October, 24). *Apprenticeship works for states*. Retrieved from https://blog.dol.gov/2016/10/24/apprenticeshipworks-for-states/

Shumer, R., & Digby, C. (2013). Programs of study: Development efforts in six states. *International Journal of Education Reform, 22*(4), 355-374.

S.L. 2013-1, (n.d.). *North Carolina General Assembly Website.* Retrieved from https://www.ncga.state.nc.us/EnactedLegislation/SessionLaws/HTML/2013-2014/SL2013-1.html

Somekh, B., & Lewin, C., (2011). *Theory and methods in social research*. Thousand Oaks, California: Sage.

Stake, R. (1995). *The art of case study research.* Thousand Oaks, California: Sage.

Stone, J.R., & Aliaga, O.A., (2003). *Career and technical education, career pathways, and work-based learning: Changes in participation 1997-99*. St. Paul, Minnesota: Research Center for Career and Technical Education.

Symonds, W. (2012). Pathways to Prosperity. Educational Leadership, 69(7), 35-39.

Symonds, W., Schwartz, R., & Ferguson, R. (2011). *Pathways to prosperity: Meeting the challenge of preparing young Americans for the 21st century*. Boston, MA: Harvard graduate school of education.

Torpey, E. (2013). Apprenticeship: Earn while you learn. *Occupational Outlook Quarterly, 57*(2), 2-13.

U.S. Department of Labor. (n.d.-a). *Advancing apprenticeships as a workforce strategy: An assessment and planning tool for the public and workforce system.* Retrieved from https://www.dol.gov/apprenticeship/docs/RA-Planning-Tool.pdf

U.S. Department of Labor. (n.d.-b). Equal opportunity: Advancing diversity and inclusion in apprenticeship. Retrieved from https://www.doleta.gov/oa/eeo/

U.S. Department of Labor. (n.d.-c). Equal opportunity: Selection procedures. Retrieved from https://doleta.gov/oa/eeo/selection/

U.S. Department of Labor. (2010). *Apprenticeship frequently asked questions*. Retrieved from https://www.doleta.gov/oa/apprentices.cfm

Voytek, S., & Zimmermann, A. (2015). Work-based learning in policy and practice. *Techniques: Connecting Education & Careers*, *90*(1), 20-23.

Yin, R.K. (2009). *Case study research design and methods.* Thousand Oaks, California: Sage.

Yingwang, W., Goodrum, P. M., Haas, C., Glover, R., & Vazari, S. (2010). Analysis of the benefits and costs of construction craft training in the United States based on expert perceptions and industry data. *Construction Management & Economics 28*(12), 1269-1285. doi:10.1080/01446193.2010.524238

Appendices

Appendix A

Interview Questions: (semi- structured interview)

Access to Apprenticeship Programs

For the Apprentice:

1. Tell about how you came to know about the apprenticeship program you entered.
2. Describe the application process.
3. What or who helped support you through the process of completing the application and gaining access to the program?
4. Describe barriers you may have faced accessing the program and how you overcame them.

For Support Staff:

1. Tell about the apprenticeship program at your school/business.
2. Describe the application process.
3. Describe how you interact with potential apprentices during the application process.

Apprenticeship Experience and Completion

For the Apprentice:

1. Tell about your experience as an apprentice.
2. What or who helped support you through the apprenticeship experience to completion?
3. Describe barriers you may have faced participating in or completing the apprenticeship and how you overcame them.
4. What do you attribute to your success in completing the apprenticeship program?

For Support Staff:

1. Talk about your experiences in working with (apprentice).
2. What or who helped support his apprenticeship experience and completion.
3. Describe how barriers to participation and completion were overcome.
4. What do you attribute to your school/company having success with black male completion of apprenticeship?

Post-Apprenticeship Completion

For the Apprentice:

1. What did completing an apprenticeship do for you personally?
2. What did completing an apprenticeship do for you professionally?
3. Looking back over your whole experience, how does completing an apprenticeship impact you today?

For Support Staff:

1. Looking back over the whole experience, how did the apprentice completing the program impact your school/company program?

Appendix B

From: IRB <irb@appstate.edu>
Date: December 4, 2017 at 4:14:42 PM EST
To: <kimballes@appstate.edu>
Cc: <taylorjs@appstate.edu>
Subject: IRB Notice - 18-0013
To: Elizabeth Andrews-Standafer
College of Education
CAMPUS EMAIL

From: Dr. Andrew Shanely, IRB Chairperson
Date:
RE: Notice of IRB Approval by Expedited Review (under 45 CFR 46.110)
Agrants #:
Grant Title:

STUDY #: 18-0013
STUDY TITLE: The Lived Experiences of Black Male Apprentices in Career and Technical Education Apprenticeship Programs.
Submission Type: Initial
Expedited Category: (6) Collection of Data from Recordings made for Research Purposes,(7) Research on Group Characteristics or Behavior, or Surveys, Interviews, etc.
Approval Date: 12/04/2017
Expiration Date of Approval: 12/03/2018

The Institutional Review Board (IRB) approved this study for the period indicated above. The IRB found that the research procedures meet the expedited category cited above. IRB approval is limited to the activities described in the IRB approved materials, and extends to the performance of the described activities in the sites identified in the IRB application. In accordance with this approval, IRB findings and approval conditions for the conduct of this research are listed below.

Study Regulatory and other findings:

The IRB determined that this study involves minimal risk to participants.
All approved documents for this study, including consent forms, can be accessed by logging into IRBIS. Use the following directions to access approved study documents.

1. Log into IRBIS
2. Click "Home" on the top toolbar
3. Click "My Studies" under the heading "All My Studies"
4. Click on the IRB number for the study you wish to access
5. Click on the reference ID for your submission
6. Click "Attachments" on the left-hand side toolbar
7. Click on the appropriate documents you wish to download

Approval Conditions:

Appalachian State University Policies: All individuals engaged in research with human participants are responsible for compliance with the University policies and procedures, and IRB determinations.

Principal Investigator Responsibilities: The PI should review the IRB's list of PI responsibilities. The Principal Investigator (PI), or Faculty Advisor if the PI is a student, is ultimately responsible for ensuring the protection of research participants; conducting sound ethical research that complies with federal regulations, University policy and procedures; and maintaining study records.

Modifications and Addendums: IRB approval must be sought and obtained for any proposed modification or addendum (e.g., a change in procedure, personnel, study location, study instruments) to the IRB approved protocol, and informed consent form before changes may be implemented, unless changes are necessary to eliminate apparent immediate hazards to participants. Changes to eliminate apparent immediate hazards must be reported promptly to the IRB.

Approval Expiration and Continuing Review: The PI is responsible for requesting continuing review in a timely manner and receiving continuing approval for the duration of the research with human participants. Lapses in approval should be avoided to protect the welfare of enrolled participants. If approval expires, all research activities with human participants must cease.

Prompt Reporting of Events: Unanticipated Problems involving risks to participants or others; serious or continuing noncompliance with IRB requirements and determinations; and suspension or termination of IRB approval by an external entity, must be promptly reported to the IRB.

Closing a study: When research procedures with human subjects are completed, please log into our system at https://appstate.myresearchonline.org/irb/index_auth.cfm and complete the Request for Closure of IRB review form.

Websites:

1. PI responsibilities: http://researchprotections.appstate.edu/sites/researchprotections.appstate.edu/files/PI%20Responsibilities.pdf

2. IRB forms: http://researchprotections.appstate.edu/human-subjects/irb-forms

CC:
Jerianne Taylor, Sustainable Technlgy & Built Envirn

Appendix C

Letter of Agreement

December 7, 2017

To the Appalachian Institutional Review Board (IRB):

I am familiar with Elizabeth Andrews-Standafer's research project entitled, The Lived Experiences of Black Males in Career and Technical Education Apprenticeship Programs. I understand my company's involvement to be to allow employees and former pre-apprentices to be interviewed, providing archival data, or allowing apprentices to be observed.

As the research team conducts this research project I understand and agree that:

- This research will be carried out following sound ethical principles and that it has been approved by the IRB at Appalachian State University.
- Employee participation in this project is strictly voluntary and not a condition of employment at our company. There are no contingencies for employees who choose to participate or decline to participate in this project. There will be no adverse employment consequences as a result of an employee's participation in this study.
- To the extent confidentiality may be protected under State or Federal law, the data collected will remain confidential, as described in the protocol. The name of our agency or institution will not be reported in the results of the study.

Therefore, as a representative of the company, I agree that Elizabeth Andrews-Standafer's research project may be conducted at our agency/institution, and that Elizabeth Andrews-Standafer may assure participants that they may participate in ***[interviews, etc.]*** and provide responsive information without adverse employment consequences.

Sincerely,

Appendix D

Information to Consider about this Research

The Lived Experiences of Black Males in Career and Technical Education Apprenticeship Programs.

Principal Investigator: Elizabeth K. Standafer
Department: Educational Leadership
Contact Information: kimballes@appstate.edu
Faculty Advisory: Jerianne Taylor taylorjs@appstate.edu

You are invited to participate in a research study about Black male completion of apprenticeship programs.

If you agree to be part of the research study, you will be asked to be part of a semi-structured interview that will consist of questions about your participation in the apprenticeship experience. The interviews will be recorded and the recordings will be destroyed after they are transcribed. Neither the participant name, the name of the participating school or the name of the company will be used in the research. A pseudonym will be used to guard the identity of participating stakeholders. All records will be kept electronically and coded so that information is not identifiable. Only the researcher will have access to electronic records from the interview. Electronic records will be destroyed by May 1, 2018. The interview process will last no more than one hour and will occur on 12/7/17. Interview will take place at High Point Central High School. I may call you clarify information shared in the interview during the transcription process. You will be able to review information written about your interview to ensure that it reflects your voice and intent.

Benefits of the research may include helping identify program characteristics that help other Black males successfully complete apprenticeship programs in the future along with the opportunity to explore your successes.

Risks and discomforts may include sharing details about the company or school with whom you are affiliated or an unintended breach of confidentiality.

Participating in this study is completely voluntary. Even if you decide to participate now, you may change your mind and stop at any time. You may choose not to answer any interview questions for any reason.

If you have questions about this research study, you may contact Elizabeth Standafer at 336-213-5831 kimballes@appstate.edu or Dr. Jerianne Taylor (faculty advisor) at 828-262-2000 taylorjs@appstate.edu .

This research project has been approved on 12/5/17 by the Institutional Review Board (IRB) at Appalachian State University. This approval will expire on 12/4/18 unless the IRB renews the approval of this research.
Questions regarding the protection of human rights may be addressed to the IRB administrator, Research Protections, Appalachian State University, Boone, NC 28608, (828) 262-2692, irb@appstate.edu

I give *Elizabeth K. Andrews-Standafer* ownership of the tapes, transcripts, recordings, from the interview(s) she conducts with me and understand that tapes and transcripts will be kept in *the researcher's possession***.** I understand that the audio recordings will be immediately deleted upon transcription. I understand that information or quotations from *transcripts* will *be published following my review.*

By signing this form, I acknowledge that I have read this form, had the opportunity to ask questions about the research and received satisfactory answers, and want to participate. I understand I can keep a copy for my records.

Vita

Elizabeth K. Andrews-Standafer graduated from Appalachian State University in December 1995 with a Bachelor of Science in Elementary Education where she was named Honor Teacher by the Reich College of Education. In 2000, she entered the University of North Carolina at Charlotte (UNCC) to study multicultural counseling and was awarded a Master of Arts, Advanced Degree. While at UNCC she served as a research assistant to the Child Development Department where she contributed to the revision of a book called *Teenage Fathers* in addition to working on grant funded research with the University of Minnesota on the child daycare choices of parents from different socioeconomic backgrounds. Mrs. Andrews-Standafer completed a Master's Certificate in School Administration in 2011 at North Carolina Agricultural and Technical University. In 2013 she was accepted into Appalachian State University's Education Specialist program where she concentrated in Higher Education and University Leadership. After earning her Ed.S in 2015, she began her doctoral pursuits in Educational Leadership at Appalachian State University.